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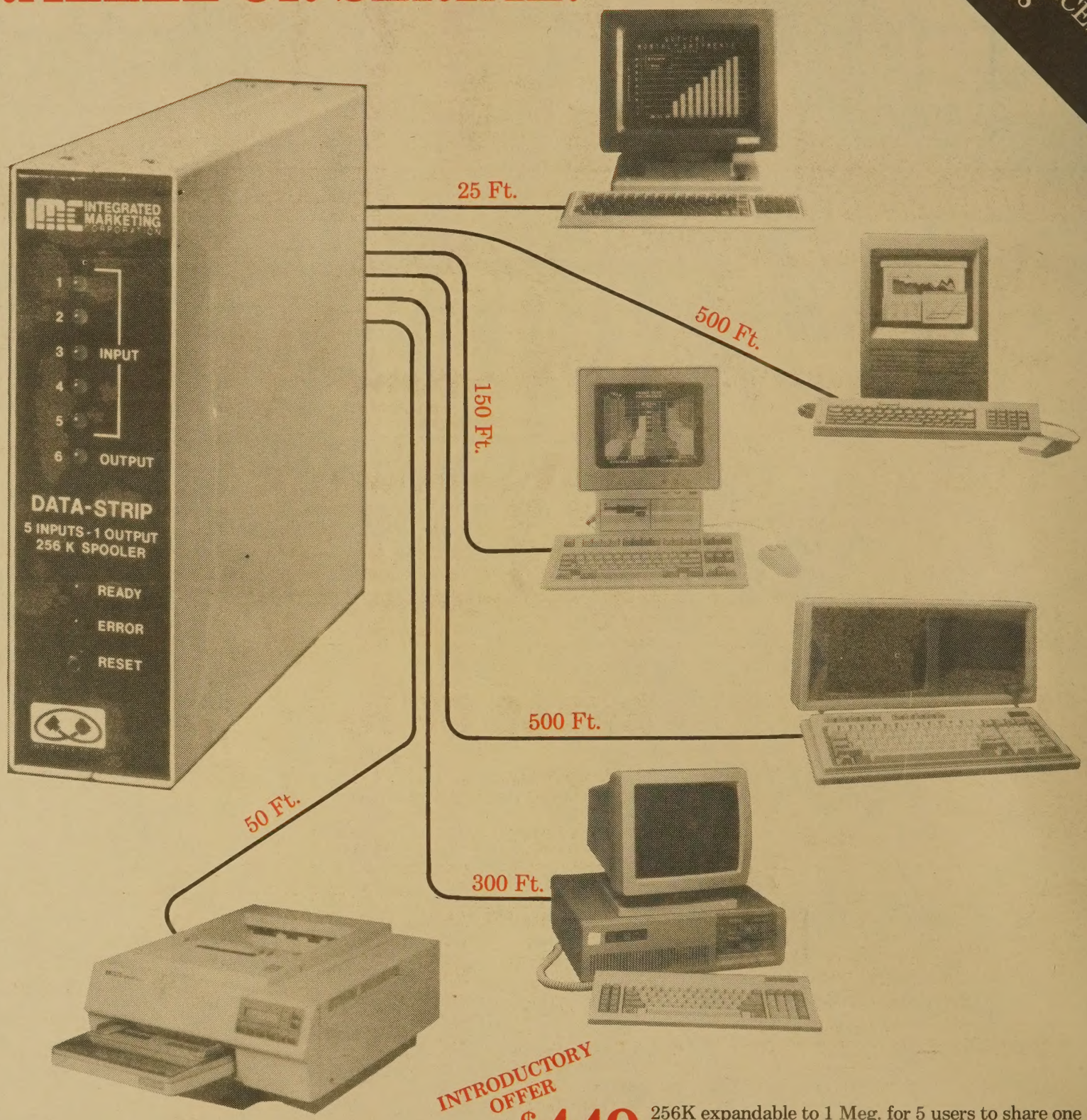

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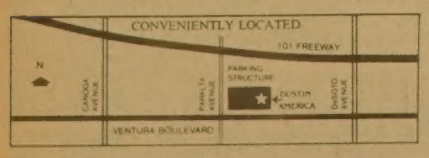

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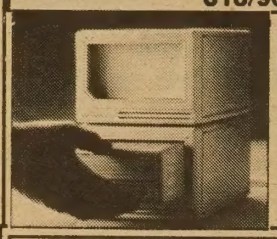

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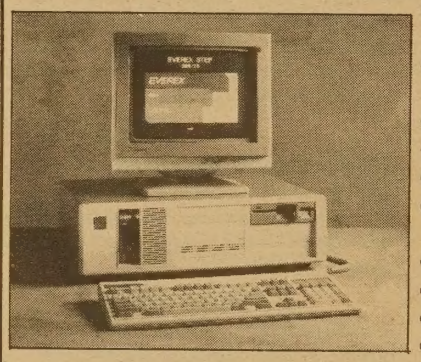

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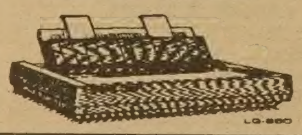

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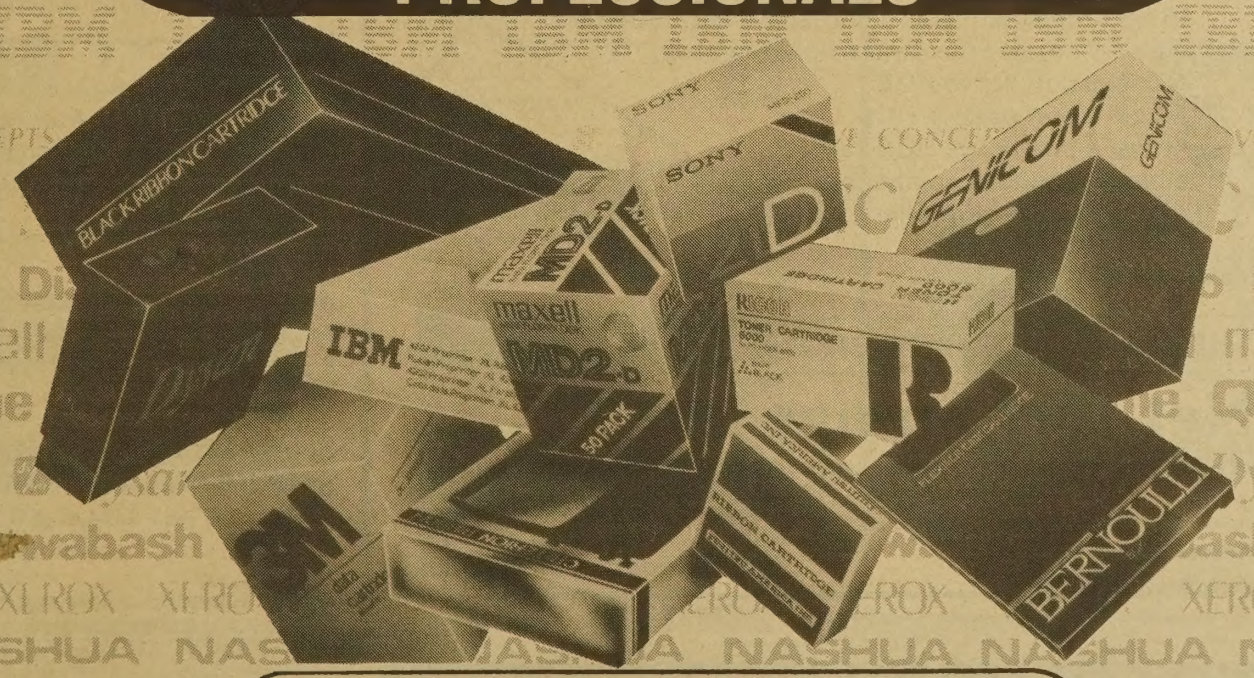

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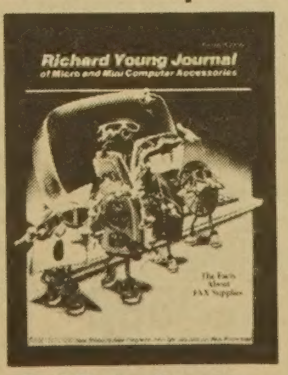

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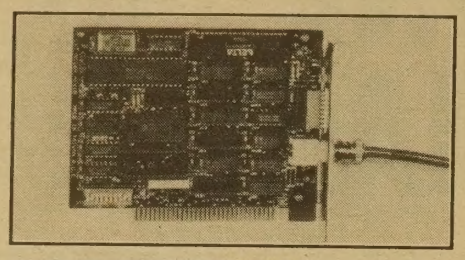

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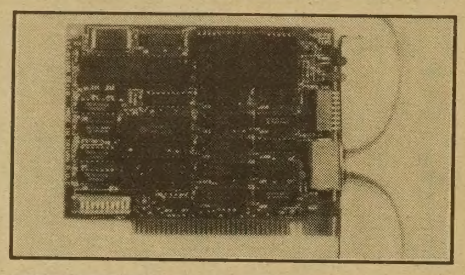

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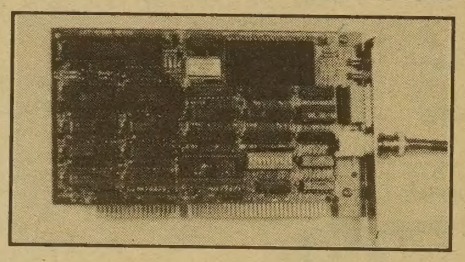

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CALENDAR OF EVENTS

March 31—April 2 National Apple User Group Conference. Indianapolis. Apple Pickers, Inc. Call: (317)291-4042.

March 31 Advanced Timeslips Seminar. Los Angeles. Mentor Technologies. Call: 1-800-227-5502.

April 1 Computer Marketplace. Costa Mesa. RK Productions. Call: 1-800-252-7927

April 1 Shop Till Ya Drop Computer Swap. Riverside. Richard James. Call: 1-800-433-7469.

April 3 End User Seminar. San Francisco. Calera Recognition Systems. Call: 1-800-672-3470.

April 4–6 Third Annual ESD/SMI Expert Systems Conference And Exposition. Detroit, MI ESD. Call: 1-800-457-9504.

April 4–6 Intelligent Systems Technology: Designing For The User Short Course. Los Angeles. UCLA Extension. Call: (213)825-1901.

April 5-7 Software Maintenance Course. San Diego. Integrated Computer Systems. Call: 1-800-421-8166.

April 5-7 Micro–Mainframe Connectivity: Practical Linking Tools & Techniques Course. Los Angeles. Integrated Computer Systems. Call: John Valenti, 1-800-421-8166.

April 5 Lotus 1-2-3 Introductory Meeting. Los Angeles. American Management Association. Call: Robert Newton, (212)903-7936.

April 6 2nd Annual Mendocino County "Technology In The Redwoods." Ukiah. CUE. Call: Ken Hewitt, (707)463-5224 or 468-5894.

April 8 Computer Show and Sale. Pasadena. East-West Computer Shows. Call: (415)388-8893.

April 8 Computer Marketplace. Ventura. RK Productions. Call: 1-800- 252-7927

April 8 Shop Till Ya Drop Computer Swap. Glendale. Richard James. Call: 1-800- 433-7469.

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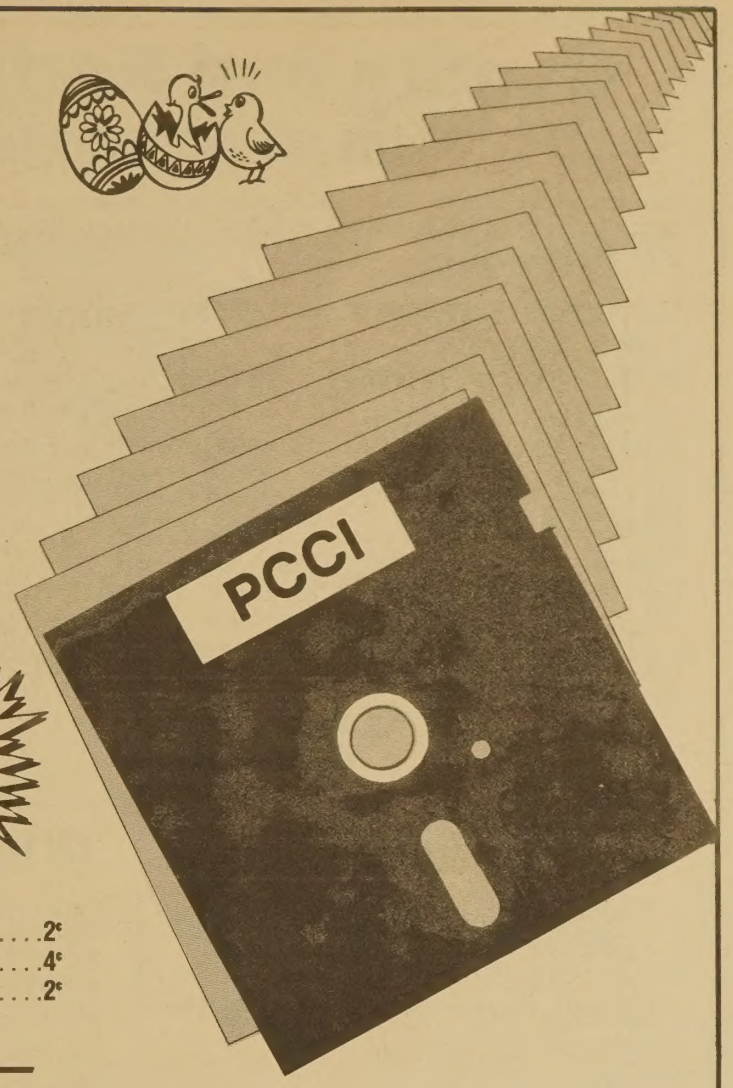

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April 9 Computer Show and Sale. San Diego. East-West Computer Shows. Call: (415)388-8893.

April 10-14 Hong Kong International Computer Conference. Hong Kong. American Federation of Information Processing Societies, Committee on Science and Technology. Call: (312)299-4227 or 299-4270.

April 10-13 MACdex/Spring (The Distribution Trade Show For Macintosh-Related Products And Services). Chicago. The Interface Group. Call: (617)449-6600.

April 10–13 Electronic Imaging '89 West. Pasadena. CAP International. Call: (617)982-9500.

April 14 Disk Operating System Introductory Meeting. Irvine. American Management Association. Call: (212)903-7936.

April 14 & 21 Professional Publishing With PageMaker. Santa Ana. New Horizons Computer Learning Center. Call: Rana Murashige, (714)556-1220.

April 16 Computer Trading Post. Glendale. Call: (818)352-9829.

April 17 The MIDI Studio Of The Nineties: A Product Demonstration Day For Working Professionals. Los Angeles. UCLA Extension. Call: (213)825-4191.

April 18-20 Connect '89, The Technical Conference And Exposition For MIS/Communications Professionals. Boston World Trade Center. Hill and Knowlton. Call: (617)330-7630.

April 18–21 Effective Skills For Technical Managers Seminar. San Diego. Integrated Computer Systems. Call: John Valenti, 1-800-421-8166.

April 22 Music And Audio Post Production On The Macintosh Computer Seminar. Los Angeles. UCLA Extension. Call: (213)825-4191.

April 22 Shop Till Ya Drop Computer Swap. Northridge. Richard James. Call: 1-800-433-7469.

April 26–28 Dataquest's 1989 Computer Storage Conference. Santa Clara. Dataquest. Call: 1-800-624-3282.

April 28 Computer Marketplace. Pomona. RK Productions. Call: 1-800- 252-7927

April 29 Shop Till Ya Drop Computer Swap. Los Angeles. Richard James. Call: 1-800-433-7469.

May 1–3 Physical Design Workshop: Module Generation & Silicon Compilation. Newport Beach. The Computer Society Of The IEEE. Call: (415)494-4845.

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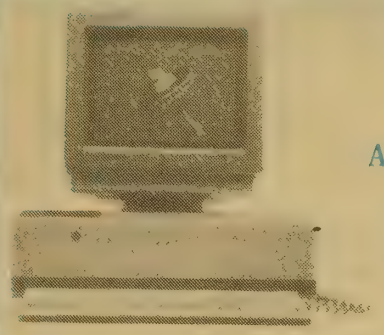

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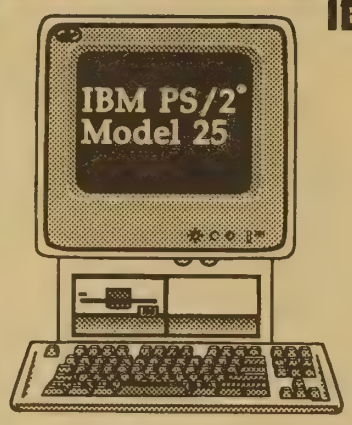

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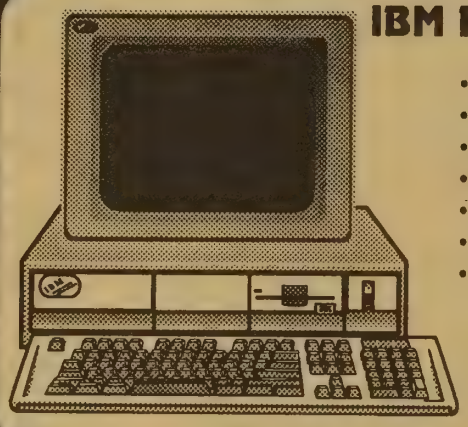

IBM PS/2 Model 30-021

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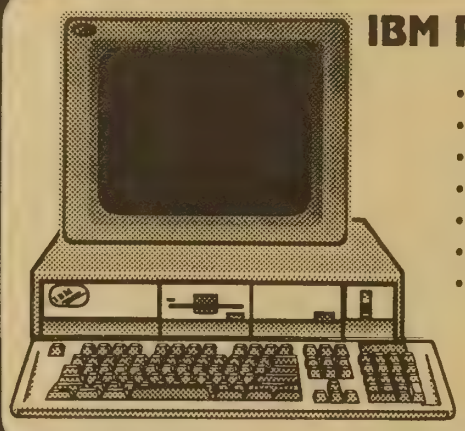

IBM PS/2 Model 30-286

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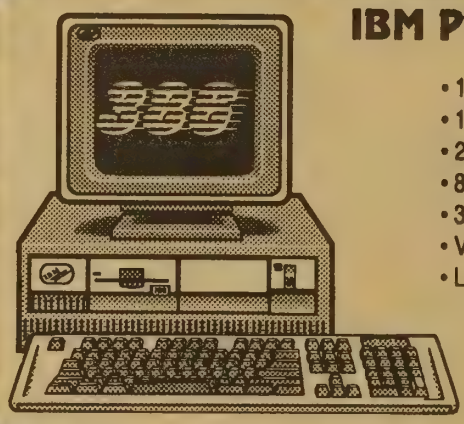

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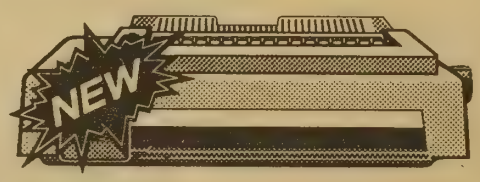

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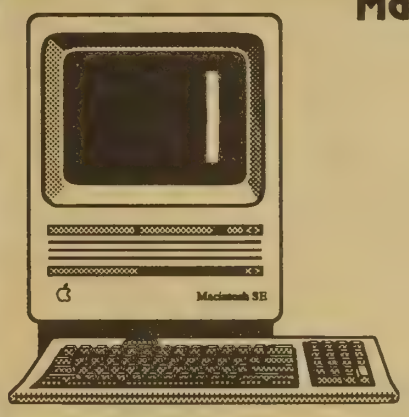

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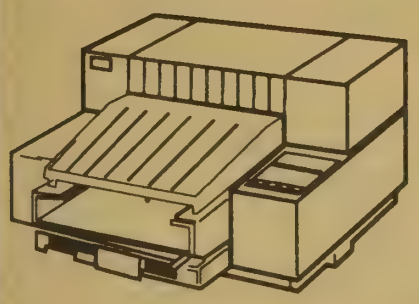

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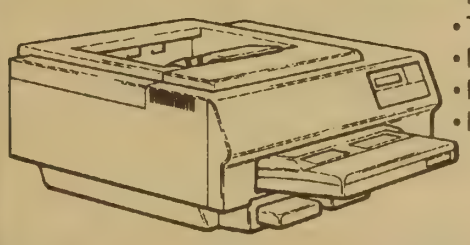

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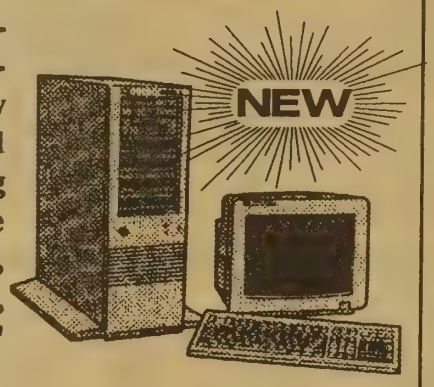

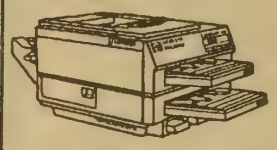

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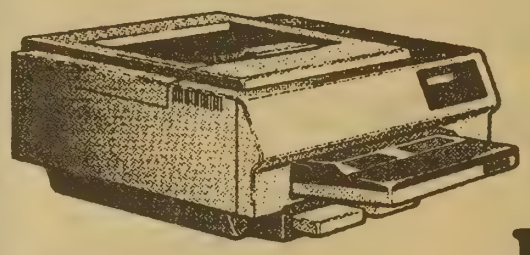

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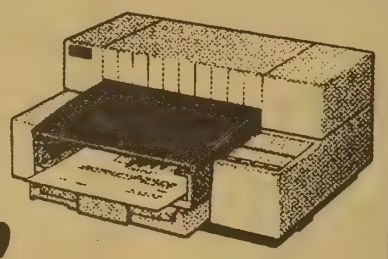

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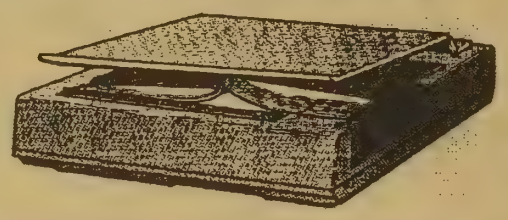

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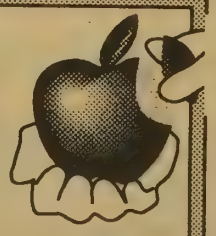

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May 9–12 Computer Network Management & Control Course. Los Angeles. Integrated Computer Systems. Call: 1-800-421-8166.

May 9–12 The Application Of Fault Tolerance Technology Short Course. Los Angeles. UCLA Extension. Call: (213)825-1901.

May 13 Computer Marketplace. Costa Mesa. RK Productions. Call: 1-800-252-7927

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May 16–18 OS/2: A Comprehensive Hands-on Introduction Class. Los Angeles. Integrated Computer Systems. Call: 1-800-421-8166.

May 18 CD-ROM Developers Seminar. San Jose. Meridian Data, Inc. Call: (408)998-1900.

May 21-24 SPA Spring Symposium. San Diego. Software Publishers Association. Call: (202)452-1600

May 22–25 Introduction To Systems Analysis, Design, And Development Information Meeting. Los Angeles. American Management Association. Call: Vern Lautner, (212)903-8208.

May 22–26 The 4.3BSD UNIX Kernel: Introduction And Networking Short Course. Los Angeles. UCLA Extension. Call: (213)825-1901.

May 22 Timeslips Seminar. Los Angeles. Mentor Technologies. Call: 1-800-227-5502.

May 23 Advanced Timeslips Seminar. Los Angeles. Mentor Technologies. Call: 1-800-227-5502.

May 31–June 1 Portable Computing '89. Santa Clara. International Data Group. Call: 1-800-225-4698.

June 3 Computer Marketplace. Pomona. RK Productions. Call: 1-800-252-7927

June 3–5 Showbiz Expo. Los Angeles. Live Time, Inc. Call: (213)668-1811.

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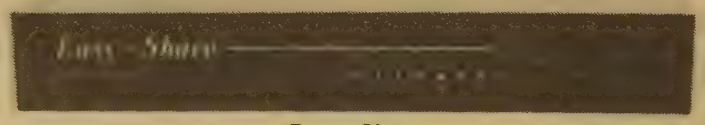

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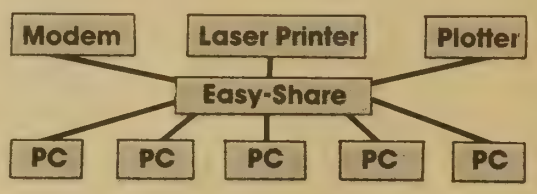

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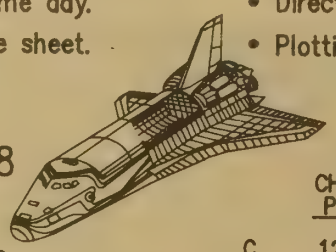

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June 5—8 1989 AIIM Show And Conference. San Francisco. Association For Information And Image Management. Call: (301)587-8202.

June 5 IEEE Workshop On AI For Computer Vision. San Diego. The Computer Society Of The IEEE. Call: (213)743-8559.

June 5–9 9th International Conference On Distributed Computing Systems. Newport Beach. The Computer Society Of The IEEE. Call: Kane Kim, (714)856-5542.

June 5—8 Autodesk Expo '89. Anaheim. Autodesk Promotions. Call: (415)332-2344, ext. 2799.

June 7 Focus On Desktop Mapping Annual Conference. Anaheim. Geographic Information Systems. Call: 1-800-882-2058.

June 13–16 ADA Programming & Software Engineering: Hands-on Introduction Class. Los Angeles. Integrated Computer Systems. Call: 1-800-421-8166.

June 13–16 Effective Skills For Technical Managers Course. Los Angeles. Integrated Computer Systems. Call: 1-800- 421-8166.

June 13–15 Distributed Database Systems Short Course. Los Angeles. UCLA Extension. Call: (213)825-1901.

June 14–16 MacHack '89. Ann Arbor, MI. University of Michigan. Call: (313)665-4444.

June 21—24 Independent Computer Consultants Association's Annual Conference. San Diego. ICCA. Call: 1-800-GET-ICCA.

June 22–24 Tutorial Week '89. Los Angeles. The Association For Computing Machinery. Call: (818)785-8000.

June 27–28 Procurement Fair. Santa Clara. Industry Council For Small Business Development. Call: (408)974-0223.

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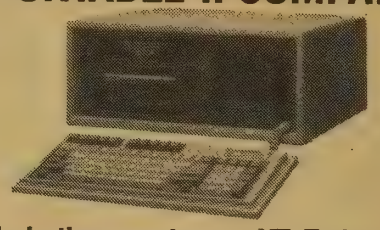

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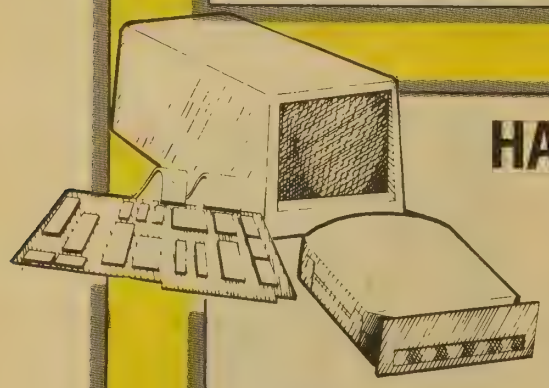

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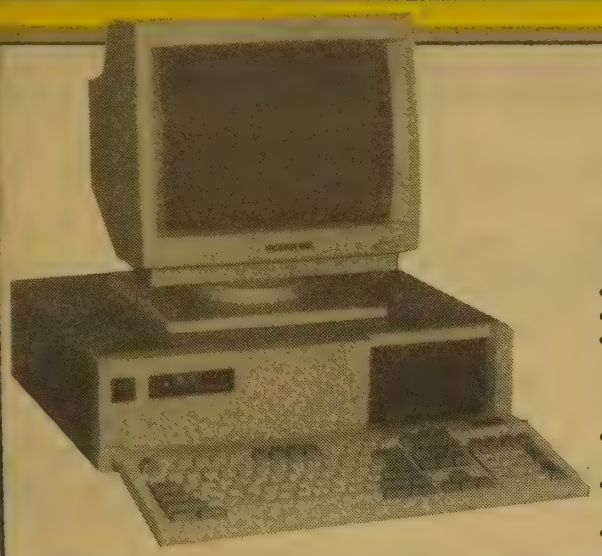

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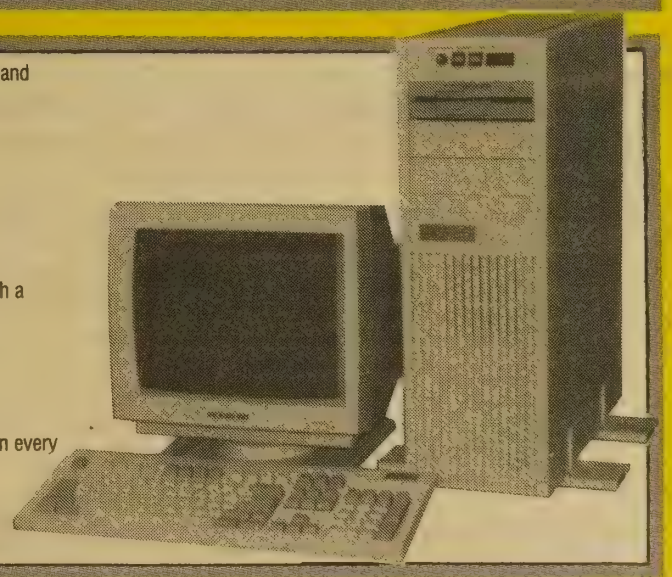

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NEWS
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BY PAUL HOFFMAN

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Paul Hoffman is an industry analyst who has been covering microcomputer technology for ten years. He can be reached on USENET (phoffman@well) and MCI Mail (264-3171). He also writes popular microcomputer books.

Judge Gives Apple First Win In MS/H-P Suit

In what many lawyers consider a significant blow to Microsoft, US District Court Judge William Schwarzer ruled that Microsoft's *Windows* version 2 was not covered in the 1985 agreement between Apple and Microsoft. Although the judge did not rule on anything else of substance in the case, the ruling eliminates what Microsoft Chairman Bill Gates has said is its most obvious defense. The ruling indicates that the judge feels that the look of *Windows* 2 is significantly different enough from version 1 to warrant a full trial on Apple's claim that *Windows* 2 and Hewlett-Packard's *New Wave* add-on infringe on Apple's visual copyrights.

The ruling came exactly a year after Apple sprung the suit in a surprise move against Microsoft (Hewlett-Packard is now considered to be an insignificant partner in the case). Although the merits of Apple's copyright case have been hotly debated in the intervening year, little attention has been placed on Microsoft's main initial defense.

Both parties agree that in 1985 Apple and Microsoft signed a cross-licensing agreement that indemnified Microsoft from action by Apple for Microsoft's *Windows* package. At the time, the only version of *Windows* that was available was version 1. In its response to Apple's lawsuit, Microsoft claimed that the agreement covered future versions of *Windows*. Judge Schwarzer disagreed, opening up the case to arguments about what the difference between the two versions are and how these differences affect any visual copyrights which Apple might have.

It is not clear from the initial arguments how Apple will proceed with its arguments. The next step is a lengthy discovery and deposition process, where each side gets to view material owned by the other side, and officials from each side will have to give private testimony. This allows the lawyers for each side to prepare their cases. This process can be short (and it is likely that Microsoft hopes that it is), but it can also drag on for years, as seen in the *Lotus vs. Paperback Software* case. Microsoft got caught up in its claim that Apple owned some copyrights, so that it had to sign the 1985 agreement, but now says that Apple has no such copyright.

The case gives a good base for resolving the issue of visual copyright and of required uniqueness for a copyright. There have been many conflicting lower-court rulings on how strong a claim there is for visual copyrights. Some courts have said that even one screen was sufficient for infringement, others insisted on much more. Apple is clearly not trying to take the low road, since it readily admits that many of the Macintosh screens in question are inspired by other companies, notably Xerox. Microsoft would like to see the judge rule that the Macintosh screens were not only inspired, but they were derived from the Xerox screens.

The lawyers for both sides have, of course, overstated their respective cases. Apple may have exaggerated its rights by trying to encompass all of the Macintosh display, even the parts that are clearly derived from other sources or are so obvious as to be unprotectable. Microsoft, on the other hand, has stated that Apple has absolutely no possible visual copyright (even though such copyright has been well established for years in video game cases), that there is nothing original in Apple's displays, and that Apple's method for displaying information is "common and ordinary." In its defense, Microsoft does not explain why it is so intent on emulating Apple's "common and ordinary" displays.

The judge's ruling will probably make a financial settlement between the parties more likely. The week before the ruling, Microsoft announced that the delay in shipping its new versions of Microsoft *Word* had caused an unexpected drop in earnings, and the stock market responded by plunging Microsoft's stock. The judge's ruling caused a similar but smaller plunge. It is estimated that Bill Gates has lost over $200 million due to the two stock drops alone. Given that IBM is heavily invested in Microsoft's visual interface for both MS-DOS and OS/2, it is likely that Gates will have to deal with many pressures in the coming months and that the case may be settled without a definitive ruling. Many software companies would be sorely disappointed if the case was finished without a legal resolution, however, since the issues that Apple and Microsoft have brought up are vitally important to many other manufacturers.

Fuji And BASF Announce Disk Manufacturing Plant

With the rising popularity of 3.5" disks and the US government's protectionist moves against Japan looming, Fuji and BASF have agreed to a joint venture to manufacture disks in the US under the name of "B & F Microdisks." The two companies are building a $50 million plant in Bedford, Massachusetts, which will begin manufacturing later this fall. When in full production, the factory will make almost 100 million disks a year.

NEWS AND ANALYSIS

Congress Gets On The Virus Bandwagon

The beginning of the Bush administration has not caused much of a feeling of harmony among the Democrats and Republicans in the US Congress. However, the recent rash of computer viruses and the concomitant publicity about them in the popular press has caused one of the first high-tech bills to have a surprising amount of bipartisan support. Introduced recently by Californians Wally Herger and Pete Stark (Republican and Democrat, respectively), HR 55 creates new criminal and civil penalties for anyone who "knowingly inserts into a program for a computer, or a computer itself, information or commands, knowing or having reason to believe that such information or commands may cause loss, expense, or risk to health or welfare." HR 55 would expand the 1986 Computer Fraud and Abuse Act to also cover viruses. The list of co-sponsors of the bill is extensive, including both the most liberal and most conservative members of Congress, and is heavily weighted with Californians.

The rhetoric associated with the bill is similar to much of the rhetoric that appeared in the computer press about a year ago, when the first microcomputer viruses became widespread. However, in a display of unfortunate misinformation, the sponsors included instances of non-virus computer security problems in their cover letter for the bill. Fortunately, the bill itself does not go into the types of destruction that must take place in order for the virus creator or spreader to be prosecuted. Instead, it simply extends the current law to include computer viruses and, without naming them, computer worms.

With its large list of co-sponsors and no significant detractors, the bill is likely to pass easily and will most likely be signed into law. Even without the bill in place, it is probably still possible to convict previously-caught virus perpetrators under the current law. HR 55 will simply make it clearer to judges (and, one hopes, to people who create viruses) that the penalties for viruses are the same as for other malicious vandalism.

UNIX Wars: You Can't Follow The Fighters Without A Program

This year's Uniforum, the annual meeting of almost everyone in the UNIX market, showed that UNIX has not taken off. Despite the best efforts of major users and many manufacturers, the infighting among the largest vendors has significantly slowed the acceptance of UNIX into markets in which many people would love to see it move. Although there were many new machines shown running UNIX, and the cost of those machines has dropped faster than the cost of lower-powered microcomputers that run MS-DOS, business users have shown a great reluctance to accept UNIX since it is unclear which way the operating system is going.

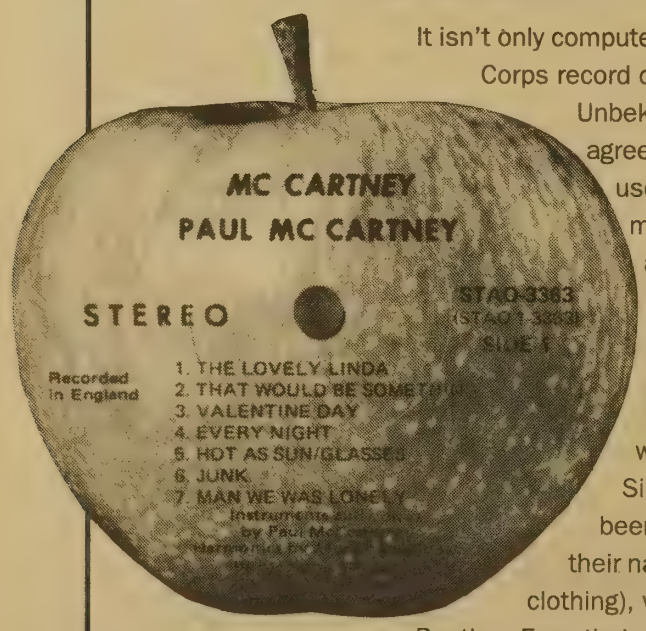
Even with the stagnation in new markets, UNIX is still doing very well in the one market which has been its base of support for over five years: the government, particularly the military. Many parts of the government standardized on UNIX years ago, and that standardization has become a boon for the UNIX industry, with new billion-dollar contracts supporting many hardware and software vendors. Particularly in the military, where networks of UNIX-based graphics workstations are becoming more popular, the future of UNIX has become increasingly important. Unfortunately, the big players in the UNIX market have made that future muddy.

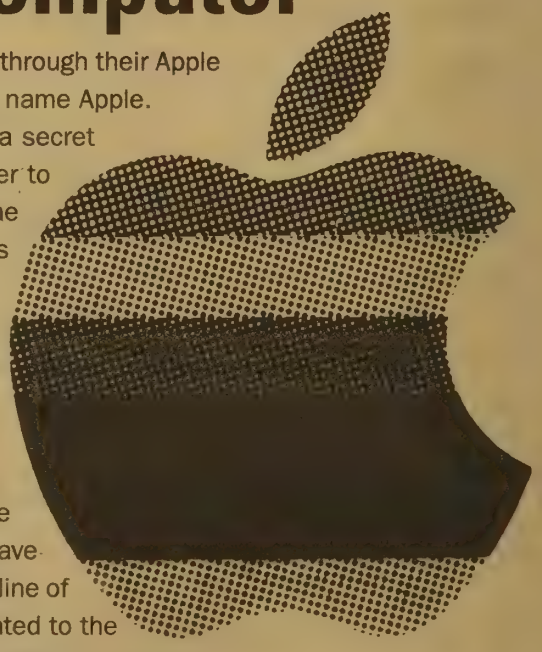
The war between AT&T and major manufacturers was the major topic of discussion at the show. Briefly, AT&T and its supporters (in a group called UNIX International) want AT&T to have final say in how future versions of UNIX will look and act; many major manufacturers (in a group called Open Software Foundation, or OSF) want to have control themselves. However, the discussion was not going the way that either sided wanted to hear. Major users, especially in the government, refused to take sides in the argument. Since all major systems bought by the government are bought by contract, the winner of a contract might be in either UNIX International or OSF; in fact, a contract might be won by a systems house that uses computers from both sides. This, of course, worries the government buyers since it is not clear how well these computers will work with each other five or ten years from now. When all contracts were awarded to IBM running IBM-proprietary operating systems, this worry was never there.

Interestingly, IBM has been behind much of the fighting. IBM was one of the founding members of OSF and donated its operating system technology as the base for the first OSF product, which will be released late this year or early next year. Without that base and without IBM's name in its masthead, OSF would probably have never been formed.

Many people pointed out that with the endorsement of IBM, by far the world's largest computer maker, software from OSF would certainly be a dominant force in the industry. However, IBM announced after the end of the Uniforum show that it had no intention of selling the first version of the OSF software. This significantly undermines the argument that IBM's participation will make OSF

Beatles Sue Apple Computer





It isn't only computer companies suing each other any more. The Fab Four, through their Apple Corps record company, have sued Apple Computer for the use of the name Apple.

Unbeknownst to almost anyone, the two companies signed a secret agreement in 1981 that supposedly allowed Apple Computer to use the Apple name and logo as long as it did not go into the music business. Now that Apple Computer's computers are used heavily in the music business, Apple Corps is suing Apple Computer for damages and back royalties. The Beatles claim that the computers benefit from the name that the Beatles used for their record company.

The suit may seem a bit bizarre, coming from a group who's made memorable the phrase "All you need is love." Since Apple Corps and its Apple Records subsidiary have been almost inactive for the last ten years (other than to have their name on reissues of the Beatles' records and on a minor line of clothing), virtually no one thinks that Apple Computer is at all related to the Beatles. Even their logos are quite different. Apple Corps has an all-green apple and an apple slice, while Apple Computer has an apple with horizontal rainbow colors and a bite taken out of it.

The reasoning for the suit is unclear, since the surviving Beatles are still making lots of money individually and from record reissues. Interestingly, very little sentiment has come out against the Beatles for the suit, unlike what came out against Apple when it filed suit against Microsoft last year (see above).

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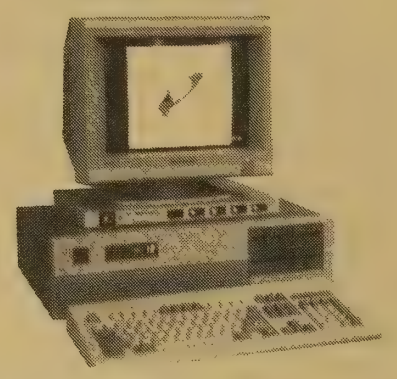

- 640KB Memory, 0 Wait State
- Phoenix Bios w/Set up
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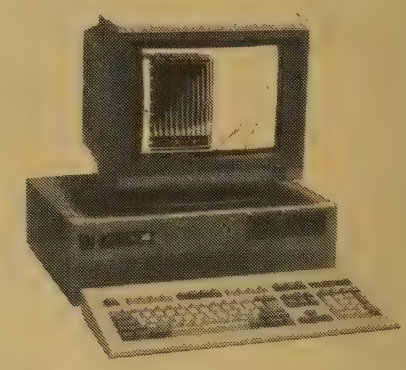

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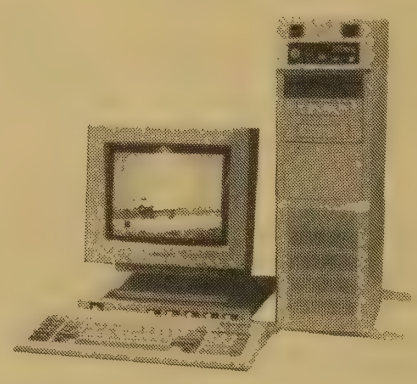

- 1 MB Memory, 0 Wait, Phoenix Bios
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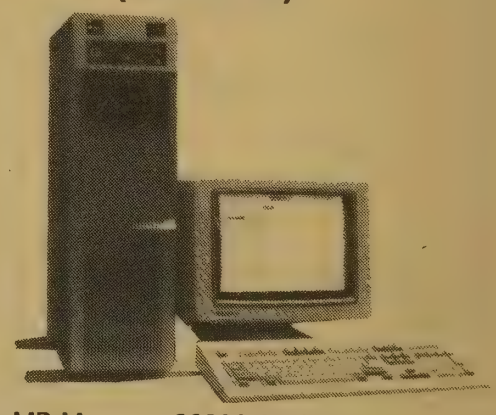
80 DATA 25 MHz 386 (SI=31.4)



- 1 MB Memory, 80386-25 CPU
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- Tower Case/Keylock/Speed Display
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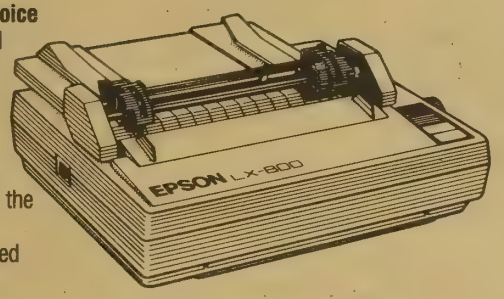

- Full-featured, 80-column dot-matrix printer for affordable performance in the home or office
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- Epson SelecType front control panel offers quick, easy selection of popular typestyles
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- Compatible with industry-standard Epson and IBM software codes
- One year limited warranty

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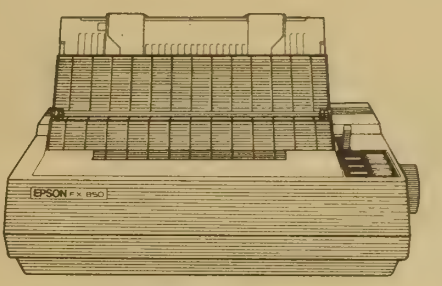
FX-850

Epson's high-speed FX-850 dot-matrix computer printer is equipped with outstanding performance features.



- Narrow-carriage 9-pin, dot-matrix printer.
- SmartPark, a unique Epson paper-handling innovation, lets you switch from fanfold to single sheets or envelopes without removing hardware or paper.
- With a standard push feed tractor and single sheet friction feed, the FX-850 can handle virtually any type of paper as well as envelopes.
- Exclusive SelecType front control panel puts popular printer features and SmartPark operations at your fingertips.
- The FX-850 prints 264 characters per second (CPS) in high-speed draft mode (12 CPI); 54 CPS in Near Letter Quality mode (12 CPI).
- Insulated for quiet operation.
- Optional cut sheet feeder and pull tractor are available.
- Backed by Epson's one year limited warranty

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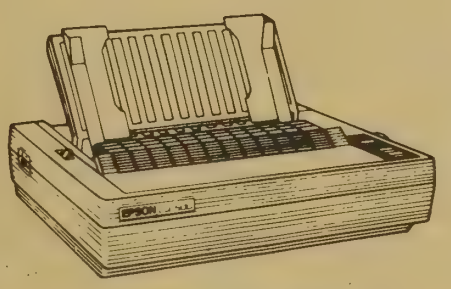
LQ-500

Epson's LQ-500 is a high-resolution, Letter Quality computer printer with outstanding performance features and remarkable value.



- Epsons's 24-pin, dot-matrix technology creates true Letter Quality characters and high-resolution graphics
- Prints 180 characters per second (CPS) in draft mode; 60 CPS in letter quality (12 CPI)
- Automatic single sheet loading, standard pull tractor and friction feed for versatile paper handling
- Exclusive SelecType front control panel offers quick, easy selection of popular typestyles, fonts and pitch
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- Optional single-bin cut sheet feeder
- One year limited warranty

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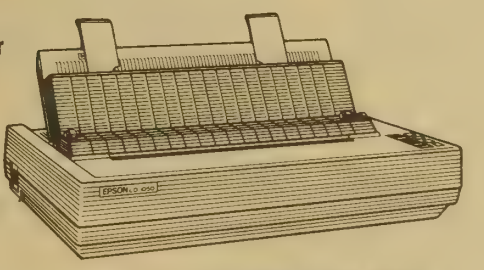
LQ-1050

The wide-carriage LQ-1050 is a high-resolution, Letter Quality computer printer with outstanding performance features.



- Epsons's 24-pin, dot-matrix technology creates true Letter Quality characters
- SmartPark, Epson's unique paper handling feature, lets you change from fanfold paper to single cut sheet paper or envelopes without removing hardware or paper
- 264 Characters per second in the high-speed draft mode deliver outstanding productivity
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- The LQ-1050 is backed by Epson's one year limited warranty

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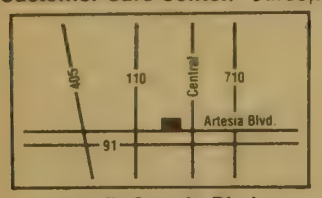

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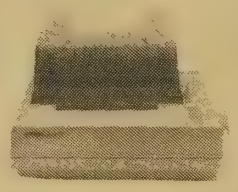

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NEWS AND ANALYSIS

software universal, and gives more ammunition to the people who claim that IBM is only in the UNIX market to get what it can in the short run and to keep it stagnant so that its own competing operating systems do well in the long run.

For its part, AT&T made sure that users did not worry about which type of processor would have the next AT&T version of UNIX available on it. It announced agreements with Intel (for the 80386 and 80486), Motorola (for the 88000 RISC chip), and Sun (for the SPARC RISC chip) to make it clear that all would have equal footing in the new system. This clearly hurt Sun, which had been marketing SPARC as the first to get the new system. However, it will not hurt Sun that much, because it is still receiving large contracts from AT&T for the work on the next system.

Application vendors at Uniforum noted that their business has not grown as fast as expected, except for the lucky few who have been included on the large government contracts. The reasons for this are becoming apparent: UNIX is more often used by companies who are doing their own development. Although many secretaries and managers in groups with UNIX systems have terminals on their desks, few are at all interested in using UNIX applications because they are not nearly as easy to use or powerful as many MS-DOS applications. In fact, one of the most common configurations for new UNIX systems is PCs running communications software attached to the UNIX computer. The PCs run regular PC applications and only tap into the UNIX system when necessary. Thus, although the number of UNIX users is increasing, the number of people using UNIX applications is increasing much more slowly.

Other major announcements at Uniforum:

•The Santa Cruz Operation, in a consortium with Digital Equipment, Relational Technology, Locus Computing, and Tandy announced a commercial product called Open Desktop for computers running XENIX/386. Open Desktop will compete with Sun's Open Look user interface. Open Desktop closely resembles OSF's Motif user interface and will allow programs that use Open Desktop to act like each other and to exchange information easily. The product will cost $995, nearly as much as XENIX/386 itself, and will not be as "open" as Open Look because it is designed to run only on XENIX.

•Data General made another stab at the UNIX market with its Aviion family of low-cost workstations. The systems are based on Motorola's 88000 RISC chips and will ship soon.

•OSF's research arm announced a grant to the Free Software Foundation, a separate entity that is creating a public-domain UNIX-compatible operating system and utilities. The Free Software Foundation is best known for its GNU EMACS editor and C and C++ compilers. Although years behind schedule, the Free Software Foundation's GNU operating system could conceivably compete with AT&T's and OSF's UNIX systems, since the system will be

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NEWS AND ANALYSIS

more easily supported by end users because the source code will be available for free, and enhancements will come from a wide variety of sources.

Apple Releases Macintosh IIcx

Moving toward smaller but more expandable systems, Apple released its Macintosh IIcx as a way to keep users who need easy expandability in the Macintosh fold. The IIcx has a 68030 CPU like the SE/30 and IIx, but is much more flexible than the SE/30 and much more compact than the IIx. It is an admission on Apple's part that its previous designs were not attracting enough new clients or giving people moving up from the lower end of the Macintosh market an easy step.

Although Apple touts the single expansion slot in the SE and SE/30, it is extremely difficult to get to. Expansion boards must be installed by dealers or technical personnel and require that the system be disassembled carefully, exposing the installer to high voltages. On the other hand, the II and IIx are much larger systems and have many more slots than someone would normally want. When the II was designed, Apple assumed that users would want about as many slots as PC/AT users had. However, most II owners have only one or two slots filled. One slot is used for the video boards for monitors, but fewer than half the users have any need for the remaining slots. Thus, the IIcx has just three slots, enough for expansion beyond the monitor but so not many as to make the box large and unwieldy. To make it even easier, you can take the modular IIcx apart by removing a single screw.

Apple feels that the size of the box will be its biggest selling point. While the II and IIx are 14.5" x 18.25", the IIcx is 12.25" x 14.5". This means that it is only slightly larger than the base of a single-page monitor which can sit on top of it. The IIcx can run A/UX and is already available at most Apple dealers. The suggested retail for a system with 4 Mb of RAM and an 80 Mb hard disk is $7,069.

At the same time, Apple introduced two monitors for the Macintosh II line. The full-page and double-page monochrome displays are Apples' first entry in the growing field and are priced higher than many of their competitors. Most competing manufacturers have since dropped their prices, making Apple's monitors look even more expensive. The market for these larger monitors is important to Apple, since the flexibility of display is one of the Macintosh's strong selling points against high-end PCs. Almost all software runs just fine on all sizes of Macintosh monitors, as compared to most PC software which requires different drivers for different screens.

Businessland Loses Compaq Contract

In one of the first tests of whether large companies will buy no-name clones in large quantities, Businessland and Compaq have parted ways over a dispute about the future of the clone market. Com-

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- 230 W power supply and deluxe AT case

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MICRONICS 20-MHZ 80386 SYSTEM

- 20/8/6/4.77 Mhz Micronics 80386 system board running in 0-wait state
- AWARD/PHOENIX BIOS for total compatibility
- 1 MB static-column RAM installed (80 ns) with 384 KB as shadow RAM
- COMPAQ 386/OS2/UNIX compatible
- DTC 16-bit 1:1 interleave hard/floppy disc controller
- one 1.2 MB floppy disk drive
- Gold-Star 12-in. high-res. amber monitor with monographics card and printer port
- enhanced-101 mechanical-tactile keyboard, AT/XT switchable
- 230 W power supply and deluxe AT case

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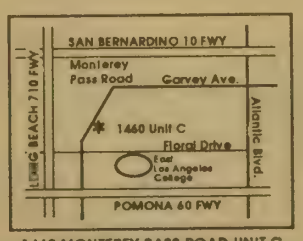

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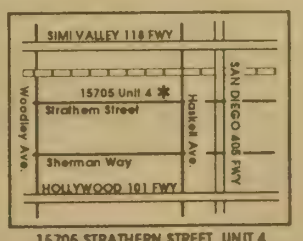

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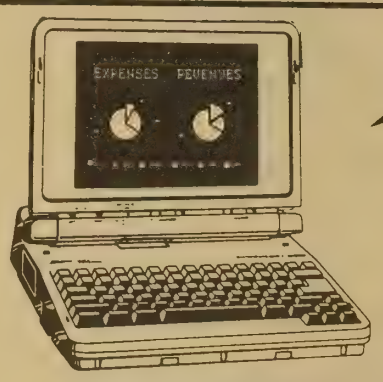

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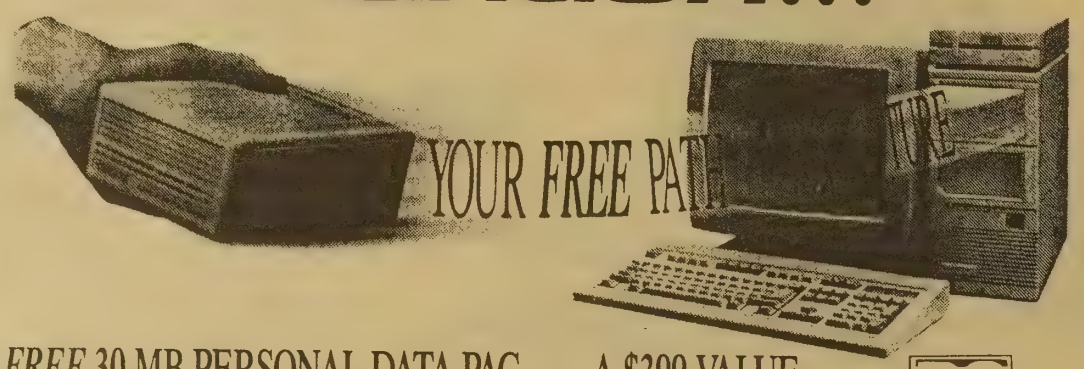

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NEWS AND ANALYSIS

paq has been strongly backing the EISA standard for future systems, while Computerland, also a big seller of IBM systems, has vociferously backed IBM's MicroChannel Architecture (MCA).

Businessland was one of Compaq's largest customers, accounting for over 7% of all Compaq systems sold. Businessland has the largest percentage of the corporate computer market of any computer chain, and Compaq, the compatible best known for high quality, accounted for 15% of Businessland's sales. Of course, Businessland will pick up one or more other lines of compatibles, so the loss of Compaq does not necessarily mean much of a loss of revenues. In fact, it could lead to an increase in revenues if more of Businessland's established customers decide to buy higher-priced IBM systems instead of switching to a lower-quality clone system.

The dispute is significant in that Compaq has yet to come out with an EISA clone system. By making a strong statement now about its belief in the future of the EISA standard, Compaq is committing to the technology even though end users have not had any say in whether they want it or not. According to Businessland, many customers think that they'd rather buy IBM's MCA systems (or clones, such as those from Tandy) than EISA systems because they think that the two systems will be of equal value and MCA is here today and shipping. Of course, IBM's rivals hope that the lower price on EISA systems (if they are in fact priced lower when they come out) will increase users' interest in EISA

GRiD Systems Moves To The Storefront And Desktop

Although it is mostly known for its high-end portable computers, GRiD Systems has taken two bold moves to get a larger share of the lucrative corporate market in which it is already established. GRiD, which was bought out by Tandy a year ago, has taken over 60 computer centers that were previously Tandy computer stores. Tandy realized that it had too many stores closely spaced for the amount of business it could get, so it is converting many of them to GRiD stores. This is the first time GRiD has had anything other than local sales offices.

GRiD's first two desktop models are a standard AT-compatible and a 80386-based system with an MCA bus. The 386mc system has a 20 MHz CPU, 2 Mb of RAM, and five MCA slots. GRiD hopes to do better with its MCA clone than Tandy has done with its Model 5000, which has not been a big seller. Most people feel that the only people interested in non-IBM MCA system are in large corporations, where GRiD already has made many inroads. GRiD portables are considered to be the Mercedes of portable MS-DOS computers, and have garnered a large share of the higher-level management purchases of portables. If GRiD is successful with its 386mc system, it is likely that it will create many more high-end systems, maybe even ones supporting the EISA standard. ■

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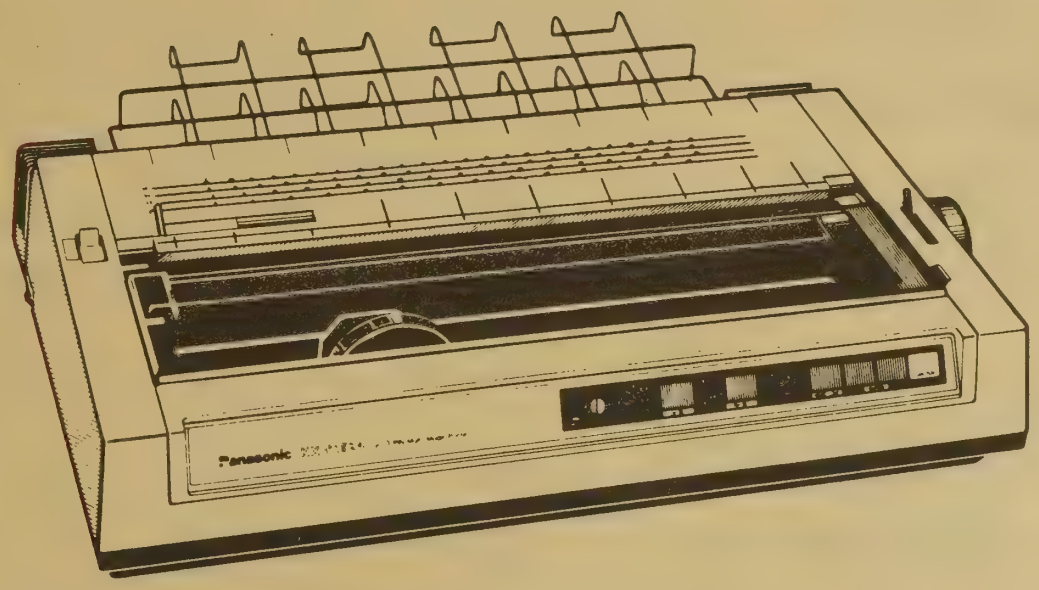

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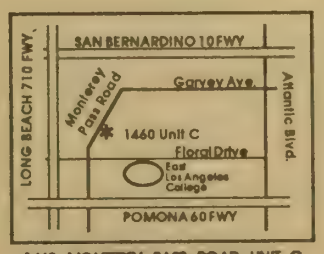

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Workgroup Augmentation: The Next Massive Micro Application

Among other things, group efforts—largely based on simple exchange of text—produced the Federalist Papers, the US Constitution, the French Revolution, and prodigious work in science and mathematics.

Copyright © 1989 by Jim Warren. All rights reserved. *Jim Warren founded the West Coast Computer Faire, the* Silicon Gulch Gazette *and* InfoWorld *newspapers, Video Initiative and the DataCast proposal for broadcast-based paperless electronic newspapers utilizing personal computers. He was the founding host of the PBS* Computer Chronicles *series, founding editor of* Dr. Dobb's Journal, *and founding president of the Microcomputer Industry Trade Association.*

I am becoming convinced that one of the most significant applications of personal computers, developed between now and the 21st Century, will be computer augmentation of group processes. It is sometimes known as—and often hyped as—"groupware."

If it can be developed to its apparent potential, it can support much better decisions and designs consuming much less time, resources and people.

In some ways, computer-assisted group efforts can return to the invaluable collegiality that existed from the 17th through the early 20th centuries. Then, dialogue was vigorous and enormously productive—and much of it was conducted by correspondence.

Among other things, group efforts of that time—largely based on simple exchange of text—produced the *Federalist Papers*, the US Constitution, the French Revolution, and prodigious work in science and mathematics.

(This article is the first of what I expect will be an ongoing commentary on this important computer application.)

Group Processes—The Application Environment

Perhaps the most common—and most significant—thing people do is work in groups to achieve a common goal. It can be as minor as carpooling kids to school or as earthshaking as developing a viable global nuclear policy.

Some of the common requirements for group processes include compromise, time constraints, information exchange, dialogue and debate shared by participants and by others, coordinating progress and work, subgroups assigned detailed subtasks, and decisions by consensus or vote or dictate.

With considerable effort and some luck, group processes actually produce results or accomplishments—that may or may not be desirable, or even tolerable.

"A camel is a horse designed by committee" has the ring of reality for most folks who have participated in group decision processes.

Group Problems Amenable To Computer Assistance

Group processes also commonly include misplaced and misrecorded information, inadequate recording and sharing of valuable dialogue, debate that is ill-reasoned and fractious, decisions that are emotional rather than rational, and interaction that is harmfully burdened with ego and manipulation, covert and overt.

Commonly, results are far less than optimal, and sometimes irrevocably disastrous. They must often be extensively reworked by new groups, and those new groups often have little or no access to significant information and decision bases developed by the previous group.

"Re-inventing the wheel" is a common group process.

An Environment for Augmented Group Processes

Gadgets first: Personal computers provide individuals with ample power for information storage, structuring, interconnecting, and retrieval—tools essential in any rational decision process.

Communication between personal computers facilitates rapid exchange and sharing of information and dialogue in highly-useful, machine-readable form. Remember how much was accomplished by slow correspondence before the time of telephones and rapid transportation.

Communications between PC-equipped group members can include voice monologue or dialogue as voice-mail—that can also annotate text. Complete text, graphic, voice and pictorial information can be efficiently stored, scanned, searched, annotated and shared.

And networked PCs can provide the delay sometimes needed for exchanges that are more productive by being more diplomatic and less abrasive. Ill-considered comments have damaged more than one group effort.

Also, such delays allow the time essential to reasoned decision-making. Too often, important decisions are poorly made, due to time-limited, emotion-laden, ego-ridden face-to-face group processes or too-"easy" phone conversations.

You can begin to see the possibilities. Look over the preceding lists of some of the characteristics and problems of group processes. See how communicating PCs can be applied. The opportunity for group-augmentation software products is wide open, and it's not going to close for years!

And, The Important Component...

Of course, there is a major stumbling block: People involved in significant group decision processes must accept and be able to use computers. What's worse, they must be willing to forgo manipulative, emotion-laden, irrational decisions. Congress? Legislatures? Corporate moguls?

Perhaps groupware will be the 21st Century Equalizer—with computer-literate bit-slingers replacing 19th Century gun-slingers, cooperating in group processes that are based on adequate information and rational—rather than emotional—decision processes. It can be an egalitarian deposing of kingmakers and manipulators, continuing our slow

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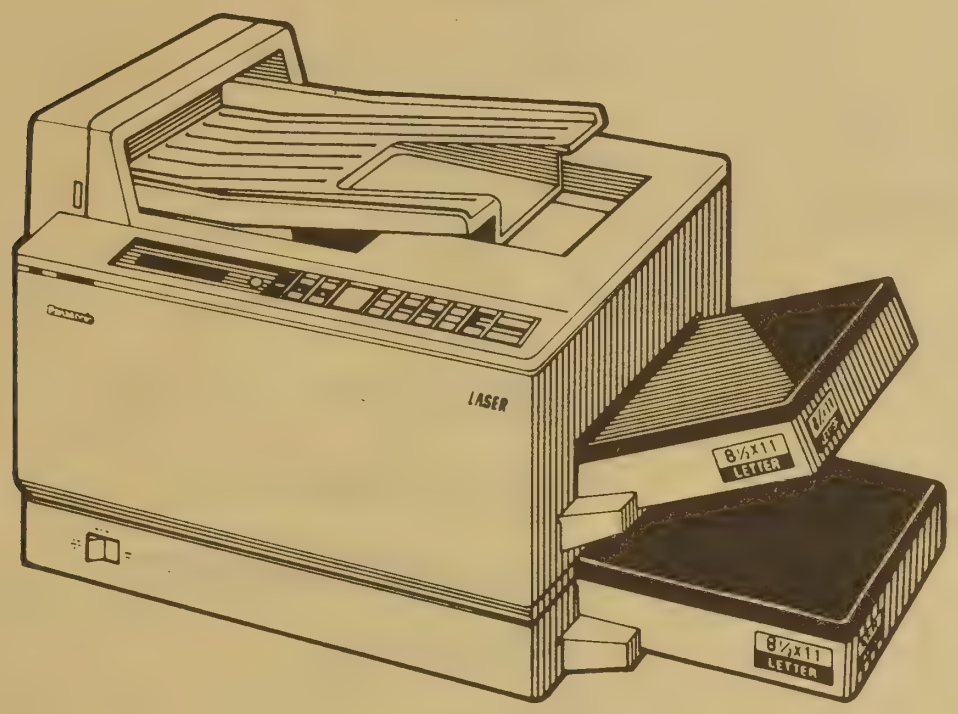

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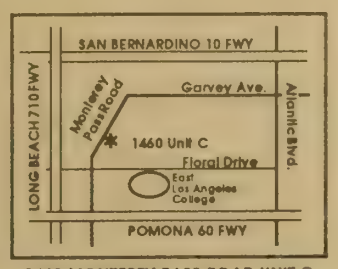

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departure from obedience to royalty that was our 16th Century heritage.

(And, with an appropriate group's Bill of Rights, it may even avoid democracy's great danger—tyranny of the majority.)

Addendum: Computer-Accessible Government

It seems particularly applicable to the preceding context that the City of Santa Monica has just activated a public-access computer network. Residents can now access information on everything from parking permits to library catalogs, all available via their personal computer and telephone.

Equally important, it allows questions, suggestions and complaints to be filed with city hall—in a form less likely to be "lost" than a phone call—and city officials have promised to respond, right to the originator's PC.

Santa Monica certainly isn't the first agency to initiate such a system (but it's an example on which I have convenient information—an article from the *Los Angeles Times*, reprinted in the 2/21/89 *San Francisco Chonicle*).

Warranties: Required Expense Or Consumer Option?

Frothing at the mouth over society's miniscule imperfections, let us consider a fantasy that is *not* realizable—"free" warranties:

Preying on the something-for-nothing syndrome of naive consumers, promoters con them into paying for product insurance they may not want to buy. Watch for this to expand in the computer world, as customers demand more and more protection from the future—for "free," of course.

People involved in significant group decision processes must accept and be able to use computers. What's worse, they must be willing to forgo manipulative, emotion-laden, irrational decisions.

Axiom: Companies do not offer something for nothing—someone always pays. Call this the "Conservation of Stuff" Law—a logical extension of Conservation of Matter and Conservation of Energy. With companies hoping to remain in business, it is their customers who pay for "free" products and services. (The same is true of "free" government services, but that's another sermon.)

Consider some auto makers' "standard" 5/50 or 7/70—7-year/70,000-mile warranties—or even the old 12/12 and 2/24 warranties. Do you really think they're free? Do you really think the price of such insurance (call it a warranty if you wish) isn't built into the price of the car? Do you really think a safety margin favoring the manufacturer isn't also added into that "basic" price?

Personally, I prefer product prices to be minimal, with such "required insurance," mandantory coverages and hidden costs being just sufficient to cover manufacturers' defects (yes, the consumer also pays those costs). Then, give the consumer the up-front option of purchasing more coverage or protection for its identified fee.

Let's limit "free" [required] warranties! Support options for individuals. (Clip and forward to your favorite manufacturers.)

Share Where

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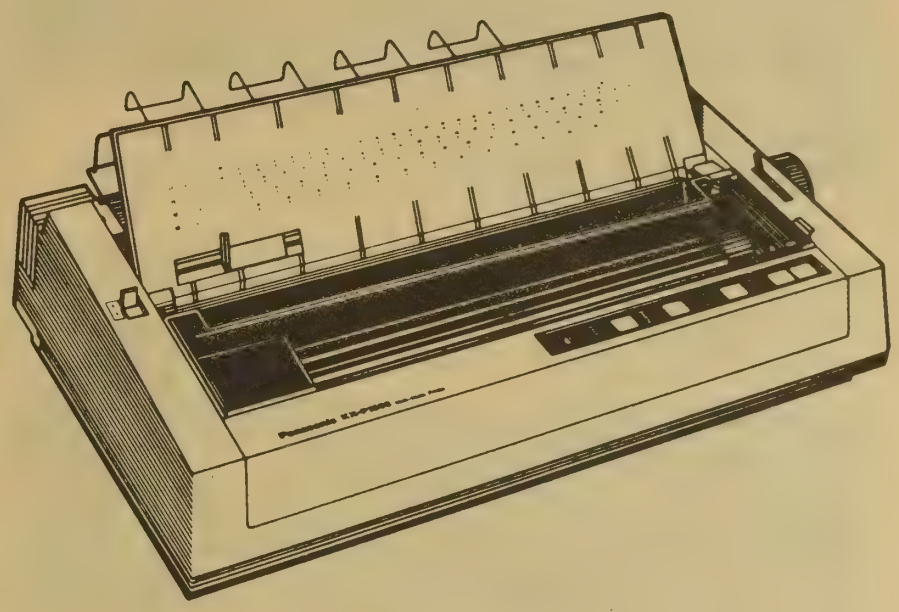

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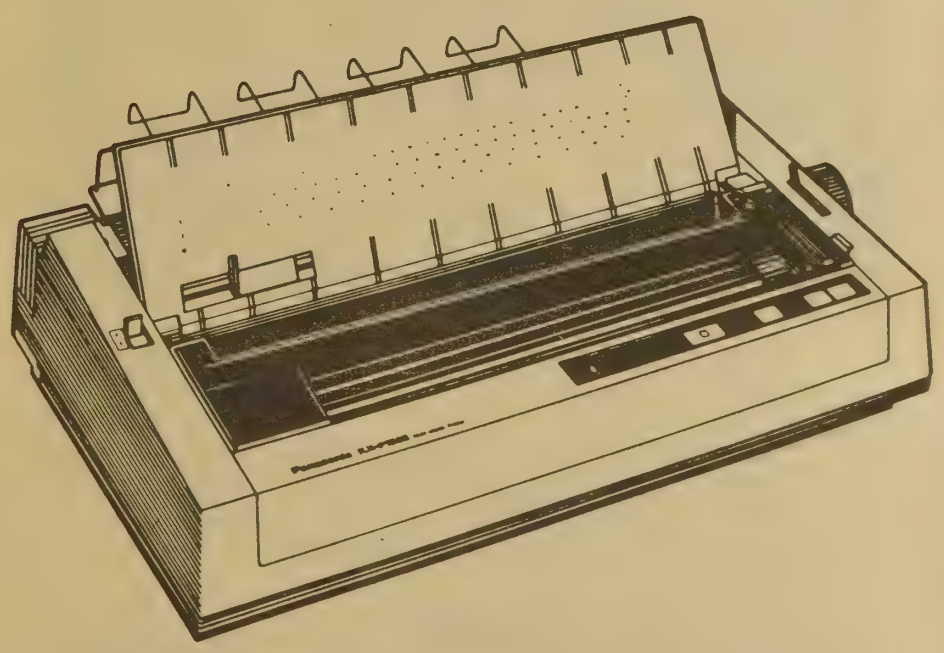

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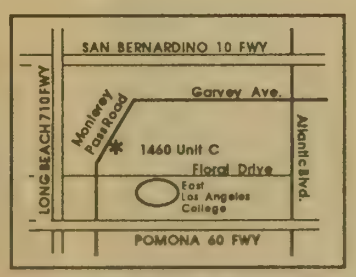

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GUEST EDITORIAL • BY DAVE FREEMAN

Tips For The Mail Order Buyer

An increasing number of end-users are buying computer equipment by mail order. Some experts, such as Future Computing, say that up to $3 billion a year is spent on hardware and software bought from direct marketers.

Not everyone buys mail order. Some knowledgeable users are attracted to the low prices and convenience of shopping from their desk. But others like to "kick the tires" and test drive a system before they buy.

For consumers who want to buy hardware and software by mail, here are 12 Dos and Don'ts.

1. Try to determine exactly what you want your purchases to accomplish—increase processing speed, memory capacity, etc. That will help you ask the right questions of the mail order reseller.

2. Be as knowledgeable as possible about the equipment you buy. The more you know about your system, its configuration and compatibilities, the better you'll be able to choose the right products to enhance it.

3. Compare prices and products by checking ads in the major computer publications.

4. What support does the reseller offer? Some direct marketers have technical and service facilities comparable to those of many retailers.

5. Ask sellers what their policies are on shipping costs, returns, and warranties.

6. Most shoppers don't want their credit cards charged before merchandise is shipped. Check with resellers about their policy.

7. Ask if cables or other accessories are required to use the product you're buying. Nothing is more frustrating than to receive your merchandise and then find out you need a cable, software, or whatever to use it.

"Try to determine exactly what you want your purchases to accomplish—increase processing speed, memory capacity, etc. That will help you ask the right questions of the mail order reseller."

8. Be patient about resellers' rules for credit card use. (E.g., some resellers will ship only to the address listed under the credit card account.) They protect you too. Cutting fraud will help these companies stay in business to serve you. If they go bankrupt, everybody loses.

9. Try your new equipment or software immediately. You'll have an easier time returning something if you are prompt in responding.

10. Save all packing and shipping materials. You'll need them if you must return something.

11. Be patient when phoning customer service reps. They may not have all the answers, but most will try their best to find out for you.

12. Buy from a reseller who displays a membership from a recognized direct marketers' national trade association (e.g., Direct Marketing Association, Microcomputer Marketing Council, etc.) They're dedicated to professional ethical standards and to helping you, the consumer, be a wise mail-order shopper. ■

Dave Freeman is founder and chairman of Advanced Computer Products, the Santa Ana-based reseller which recently marked its twelfth year of direct marketing. He is also communications chair for the Micro Marketing Council, a newly formed trade organization for direct marketers of computer equipment.

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C O N N E C

The Master Plan From Oracle

Founder/CEO Larry Ellison On The World's Third-Largest Software Company

By Steve Guttman and Mary Eisenhart

Computer and information lovers have this weird dream of *total connectivity*—getting on your PC at one end of a network, and being able to communicate with people and work on files on any other machine—without having to worry about whether they're running DOS or VMS or UNIX, and without having to worry about translating protocols, or stripping linefeeds out of a text file.

It's like a hacker's analog to that old Coke commercial, where everyone's holding hands on top of a hill chanting, "I'd like to teach the world to sing..."— something along the lines of universal computing peace and happiness. A silly analogy, perhaps, but if you think about it, it's really not so bizarre. The computers, after all, are on a network. Why should you be limited to sending email to similar machines and accessing data files through a server? Why should I have to go through the trouble of copying and converting a PC file, just so I can read it on my Mac?

The Oracle Corporation, located in Belmont, has made at least a piece of this dream a reality. In the process it's garnered critical acclaim and fabulous profits. Oracle Corporation makes the *Oracle* database manager, a SQL-based relational DBMS which runs on an incredible array of machines and operating systems. As Sun has done with the "open architecture" theme, Oracle has elevated the concepts of "portability" and "compatibility" to the level of religion. Not only will *Oracle* run on machines by the likes of Sun, IBM, Apollo and H-P, but on many less mainstream computers, e.g. Dansk Data and Bolt, Beranek and Newman. And *Oracle* runs under every flavor of UNIX imaginable. Says CEO Larry Ellison, "Oracle is notoriously promiscuous."

This egalitarian approach to computing has not only earned Oracle its users' goodwill, but has made it the undisputed market leader as well. This has translated into the kinds of profits that make most software firms glassy-eyed. Founded in 1977, Oracle has at least doubled its revenues in 11 of its 12 years, showing an impressive $282 million in sales for its 1988 fiscal year. The latest quarter's sales of $123 million made Oracle the third-largest independent software company in the world.

Oracle's commitment to portability not only gives it the ability to sell software to many different companies, but allows the program to act as an "operating systems integrator" as well. In a sense, the program can be thought of as an operating environment on top of which applications can be written to access enterprise-wide data. Because the program maintains file compatibility across different operating systems, heterogeneous computers on a network can share and access common databases. Thus, a Macintosh could modify data resident on an IBM mainframe, as long as both are on the same network. This capability was enhanced by Oracle's 1986 release of *SQL*Star*—software which can transparently bind together all of a company's distributed databases into a single logical database, making it appear from any machine as if all data is resident in one file.

Oracle has also released a number of microcomputer versions of its database, including DOS and OS/2 versions, as well as *Oracle For Macintosh*, which has a *HyperCard* front end. They also developed a popular *Lotus 1-2-3* add-in program that gives access to distributed *Oracle* databases from within *1-2-3*. Oracle seems committed to the belief that people should be able to use any popular program as a front end for its software, and we can expect to see the database interfacing to many other microcomputer programs in the future. Once you buy the "chassis and engine," Oracle thinks you should have your choice of body style. In fact, it's likely that Borland and Ashton-Tate will release future versions of *Paradox* and *dBASE* that talk to *Oracle*.

During the past year Oracle has begun to broaden its product line. In December it announced the formation of the Oracle Office Automation Division, a group that will market a series of software products to manage information on an enterprise-wide basis. Their programs will take advantage of *Oracle*'s ability to communicate among different computer systems—a capability which is obviously valuable to many applications besides just databases. The group's first offering, *Oracle*Mail*, lets users send email between any two computers on a network, regardless of their types or operating system. Oracle has also released a series of financial applications packages, and a set of CASE tools designed to help create sophisticated database applications.

With this kind of momentum, Oracle is obviously on a roll. We talked

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with CEO and co-founder Larry Ellison at the company's headquarters in the Belmont hills.

How did you come to found the company, and what needs were you trying to address?

I'd started out my first job at Amdahl. Basically I started bumming around Silicon Valley. Eventually I was VP of R&D at a couple of startup firms [who eventually went out of business], and I felt that if I was working for firms that went out of business, I really didn't need leadership to do this—I could do this all on my own. So I decided to find some way to found my own firm.

That was in 1977, and at that time you didn't go out and get venture capital for software firms because venture capitalists didn't invest in software. They only invested in things you could see, feel, or touch. So we put in $2000 of our own money and formed the company, and signed our first contract the day we opened our doors. We've been profitable ever since. We will finish our twelfth year in May, and we will have been profitable in every one of our 12 years—with no outside money whatsoever until we went public, which was in March 1986.

We started as a software company in the database business—the database management system business. We commercially pioneered relational database management systems. We released the very first commercial relational DBMS in June of 1979—sold to the intelligence community and contractors of the federal government.

How did you happen to get onto the relational bandwagon?

Well, there wasn't a bandwagon. There was no band—there wasn't a wagon either. There was a series of papers being written in the early and mid-1970s, primarily by people at IBM Research, which culminated in a November 1976 paper called, "SQL2: A Relational Database Management System." And we used that and its preceding papers from IBM Research as a blueprint for the development of *Oracle*.

We watched the development of relational database management system technology, and decided to stand on the shoulders of giants, and see if we couldn't beat IBM to the marketplace with their own ideas and own technology. We did that. We released the first commercial relational DBMS in June of 1979, and IBM didn't have its first relational system until February of 1982. So we were more than 2 1/2 years ahead of IBM to the marketplace with this technology which they invented in 1969/1970.

So we had the first commercial relational DBMS; we had the first DBMS based on the SQL language (which is the industry standard); we had the first portable relational DBMS based on the SQL language; we had the first distributed relational DBMS; we had the first fault-tolerant relational DBMS; we had the first OLTP-transaction processing relational DBMS. We have led the development of this technology from the start of the business in 1977 to the present in 1989. And that technology leadership has, in turn, made us *the* market leader. We are, by far and away, the leading supplier of relational database management systems in the world. We have a 47% worldwide market share—IBM has 25%. And IBM is second. So, we are almost twice as large as IBM, and all of our competitors...we are almost larger than all our competitors combined if you include IBM. If you take IBM out, we are twice as large as all our other competitors combined. So if you add up Relational Technology and Informix and everybody else—if you add those all together, we are twice as large as all of them combined.

We are coming mostly from the microcomputer world, where SQL is really just starting to raise its head. What are the advantages of that over dBASE, or any of the other languages?

Oh, *dBASE*—this is going to sound funny, but *dBASE* is not really a database management system in the conventional sense. A database management system is something that manages shared data—*dBASE* doesn't do that.

dBASE is a personal database management system designed for the era when personal computers were indeed personal computers. A personal computer is something that stood on your desk and had no wires coming out of the back other than the power cord. You know, you didn't share it with anybody. And it had all your personal data—your personal spreadsheets and personal files—all that stuff. You made personal decisions as to what software ran on your computer.

Well, those days are changing. Because personal computers are becoming networked to other computers—other personal computers, UNIX based servers, minicomputer servers, even mainframes. And as you start to network personal computers among themselves or to other computers, you need to share data. You need a DBMS that's designed to allow you to share data. And *dBASE* was never designed for that.

So you have to graduate to something different, and right now, the best language—the best system for doing that is a relational DBMS. And the standard language for relational DBMSes is the SQL language. If you want to share data among a bunch of networked computers, the way you do it is with SQL and a relational DBMS. *dBASE* is really coming from the era of standalone personal computers, where it was a terrific tool. Now, people will still use *dBASE*—which is really more of a programming language than it is a database manager. In the mainframe computer world, we think the primary objective of a DBMS is to allow multiple applications and users to share data—that's the real reason for a DBMS.

So that was the vision when you started your SQL implementation?

Absolutely, that was true of all DBMSes. PCs were interesting because PCs had their own notion of what a DBMS was, which was very different than the notion we were familiar with in the mainframe world. It was nonsensical to talk about sharing data on a PC DBMS when it's a single-user computer. So, what was a PC DBMS anyway if a DBMS was defined as something that allows you to share data?

As it turns out, as a programming language, *dBASE* was better than BASIC for building applications. And that's what it's really for. So you've got this programming language—what we call a 4GL, or fourth generation language—you've got this programming language that's good for helping you build screens and accessing files and all of these things. It's good for building application programs—it is primarily a programming language. What's going to happen to *dBASE* is that *dBASE* will become a programming language that interfaces to SQL databases, and it's doing that right now.

"I think the Mac is a sensational computer. I've used Macs and I've used PCs and I think Macs are dramatically better computers than PCs in terms of what they can do. But a lot of large organizations still won't look at Macs because they've standardized on IBM PCs. I'm always amazed at how many people just haven't seen one."

You touched on something that's kind of important—when people from our world deal with people from your world, some of the same words are used to mean entirely different things. I was reading one of your reports and you use the word "distributed" quite a lot, and when

"I don't think people realize how much better Macs are than PCs. And the thing that's bad for Apple is their time, their differentiation is running out. PCs are improving now, faster than Macs are improving. 'Cause PCs have such a long way to improve."

micro people use "distributed" they mean something like TOPS where you might have some files on this guy's machine and some files on this guy's machine, and all that. And I think you mean something entirely different from that.

Well, "distributed" is a general term. You can have distributed files, distributed processing and distributed databases. And those are all completely different things. So you have to finish "distributed"—add a suffix to that to see what it is that's "distributed." The notion of "distributed" is like a transparent distributed file system. You have a transparent distributed file system that's creating an illusion, where you have files on your PC that really aren't there—those files are really located on a server, a Novell server or something. You think that your B: disk is sitting in your little chassis that's underneath your screen—it's not. It's remote—on the network. And that's all transparent. That illusion is created by the software.

So there are transparent distributed file systems; there are transparent distributed database management systems. And that means that what we do through a network of different computers—that all have different data elements—is that any one person is under the impression, that all the data they're authorized to see is local on their PC, or local on their VAX machine—even though that's a fiction, that's an illusion created by the software. It's really "distributed" throughout the network of computers.

What we mean when we talk about a distributed database, it means having a bunch of different computers, that all contain database data. And the software makes it seem, to every individual user, that that data is local and in a single database.

How do you handle record integrity—like if you've got three people working on the same file at once?

Oh, that's the classic database problem—that's why databases were invented. Databases were invented to allow people to share data at very low levels of granularity.

Let's say I have an employee table with employee data and I want to give Charlie a 10% raise. I think that Charlie is sitting there on my A: disk, but actually Charlie is located in New York on a VAX VMS computer. Not only is he not on my PC, but he's not on any PC. And not only is Charlie not on my computer, but he's not on any computer in the state I'm in. It's on another computer halfway across the country.

So first the DBMS must figure out whether it needs to get a dictionary—to figure out where this data is, and that's called "location transparency." It has to find the data, and it will find out that Charlie's on a VAX computer in New York. That's all got to be totally transparent to the user of the application program. That's the data manager's job—the distributed data manager's job. That's what it's supposed to do.

Not only that—I'm trying to give Charlie a 10% raise, but I want to make sure no one else can access the record while I'm working on it. In the computer that's managing Charlie's record I've got to put a little note to lock the record and ensure that no one alters that record, because there's someone here in Chicago who wants the same record. You keep that lock on that record until I'm finished using it. The data manager's responsible for always locking, unlocking and concurrency-control management. It just has to make sure that if I'm updating, you can't be simultaneously updating that same record.

Now what's interesting is that, at what level—at what granularity are things locked? Some people lock at the table level, so if I'm updating Charlie, that means that no one else can give any employee a raise. If I'm looking at a record in the file, and changing a record in the file, that whole file is unavailable to other users. So when a distributed file system does locking on a file, if I'm changing the file, no one else can change the file. Even if it's just one character in one word in this very large file—that whole file—all the data's unavailable to other users.

A data manager has a different level of granularity. A data manager, in the case of *Oracle*, will lock just the individual record—just Charlie's personal record. Other people throughout the network can be accessing and changing data about all of the other kinds of employees. It's just Charlie that's unavailable. So one advantage of a database over a file system, is that a database has what we call a finer level of granularity—it's better at sharing data than a file system. Another advantage is that it's structured so that it can return questions like "give me the average salary of all employees." Of course, if you ask that of a file system, it wouldn't know you had employees. It wouldn't know anything about the data inside the file; it's just there.

Borland's Paradox is one of your ISVs (Independent Software Vendors). One would think it would be competing with Oracle-PC.

Oracle, again, is a true multiuser database server. And *Paradox* is a fourth generation language, very much like *dBASE* is a fourth generation language. *dBASE* will have an interface—Ashton-Tate has also joined our ISV program. And since we have a dominant market share in this business, we expect that *dBASE*, *Paradox*, and everyone else who provides fourth generation development tools will be interfacing their products to *Oracle*.

We have other products that compete with *Paradox*. We have this thing called *SQL*Forms* and *SQL*Report Writer* that create input forms and help people out. So we do have a set of tools that sit on top of *Oracle* that do compete directly with *dBASE* and with *Paradox*. We compete with *SQL Server* by Microsoft [and Ashton-Tate], but not with *dBASE*. Just like you don't think of *dBASE* as competing with *SQL Server*, you can't think of *dBASE* as competing with *Oracle*.

In essence, the microcomputer versions of Oracle are used to talk to the big machines running Oracle...

Well, not just to big machines, but to other PCs. The network can just be a network of PCs, it doesn't have to have any big machines.

With regard to Oracle for Macintosh, how did you happen to choose a HyperCard-based interface to that?

We believe in open systems. We really do. I mean we have *Oracle*, for example, as a back end; the *Oracle* database talks to *DB2* in terms of data storage. We believe you should be free to choose whatever data manager you want, and right now there are two dominant data managers in the world: IBM's *DB2* and *Oracle*. We have a 47% market share and they have 25% market share. Between that we have 3/4 of the market. It would be silly for us not to recognize that market penetration.

We have a very important product called *SQL*Connect To DB2* which allows you, when you're sitting on a PC with an *Oracle* database, to not only get access to data from *Oracle* anyplace on the network, but access to data in *DB2* anyplace on the net-

"People think that memory is going to curb Presentation Manager's impact in corporate America these days—it's irrelevant. Because if you look at how much the person who's using the machine costs, you pay $100,000 per person. And you get 1200 bucks to make that person dramatically more effective by getting them Presentation Manager—it's a no-brainer."

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Customer Profile

Danny Goodman

Age: 30 something.
It's hard to tell on guys with beards.

Profession: Author of the all-time best selling book, *The Complete HyperCard Handbook*, and more recently *Danny Goodman's HyperCard Developer's Guide*; software developer *(Business Class and Focal Point II)*. Described as a genuine "Renaissance Man"!

Hobbies: His idea of a good time is to scan the comprehensive quotes of the great Serbo-Croatian poets while enjoying a good glass of Chenin Blanc. Napa Valley, of course. He prefers non-computer keyboards, like the one on his Bechstein grand piano. A compulsive researcher!

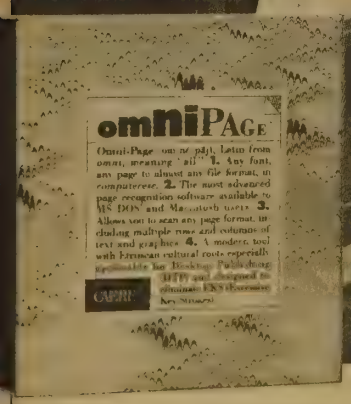
His Page Recognition Software: *OmniPage*, of course. According to Danny: "In preparing a book, or working on a special project, I need to get at information quickly to avoid disturbing my work flow. With *OmniPage*, I can scan virtually any font, or font size, in any column format, and easily place it into an existing file. I'm building a library of articles, relevant to my work, on a variety of subjects."

Favorite Quote: From the *New York Times*: "*OmniPage* has the potential to do for scanners what the *Lotus 1-2-3*™ spreadsheet did for the sale of PC's."

Things Disliked Most: "Neil Simon plays done by actors from California and guys who claim to have met with beings from other planets. Most of whom also happen to come from California. No seriously, what upsets me most is some of the over-promising in this industry, especially when it comes to page recognition software."

Favorite Scan: "I'm working on a library of articles from magazines and professional journals. You might call it the ultimate scan. I want to develop a HyperCard front end, and tie it all back to *Focal Point II*, which is really the center of my *computing universe*."

Future of Page Recognition: "I hate to type, that's why I develop HyperCard products that type for themselves. *OmniPage* helps to eliminate excessive key strokes. I can relate to that. How else does my publisher expect me to get a book out in a matter of months? Being able to cut and paste between vast libraries of data, extrapolating ideas, is the very essence of page recognition. With *OmniPage's* versatility we're not just managing pages any longer, but entire blocks of thought. It's a product that delivers on the promise of the future—finally."



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work. So that record about Charlie which was in New York in an *Oracle* database on a VAX could have been in a *DB2* database on an IBM mainframe.

We're open from the point of view of data storage/data management, and we're open from the point of view of friendliness—the *HyperCard* interface is a terrific user interface. Very high quality interfaces can be built in *HyperCard*. Because it's very high technology and people want to use it, they should be able to use it with *Oracle*. So we built the interface.

We have an interface with *Lotus 1-2-3*. We encouraged Borland to build a *Paradox* interface. And we just believe if it's better for the end user, then eventually it's going to be better for us. Users should be able to choose the front ends they want; if they want *Paradox*, or if they want *1-2-3*, or if they want *HyperCard*, they are free to do that. They can use any interface they want with our database.

You doubled in revenue over the past year.

We doubled in revenue 11 of our 12 years.

Is the market growing that fast, or is someone losing out there?

Well, since we are almost half of our market, the market's got to be growing pretty fast; we're growing pretty fast. But we are growing faster than the aggregate growth rate of the market, so we are definitely taking market share from our competitors. So if you look at our growth rate versus Informix or Relational Technology, you'll see their growth receding. They're losing market share.

What do you attribute that to?

Well, rather than just saying, "we have a better technology," I don't think even they would dispute that we're portable and they are not. We run on everything from very small PCs that fit in a briefcase, and Macintoshes, all the way up to the largest water-cooled IBM mainframe. We run on over 30 different operating systems. Informix, to the best of my knowledge, runs on two or three different operating systems—compared to 30. Relational Technology the same—three or four different operating systems. We're much more portable than they are. We make a pledge—you name it, we run on it.

Our strategy is to allow organizations to standardize on data management across all their computers. It's the portability—the ability to standardize on a data manager on all your machines, and thereby integrate and interconnect all your machines. Our products allow you to do it. The biggest problem facing MIS directors today is interconnecting all these different kinds of computers—PCs, minicomputers, and mainframes. And you can't do that with Informix; you can't do that with Relational Technology; you can do that with Oracle. You can run *Oracle* up and down your product line.

And we give you lots of other things. We run faster, we're more robust, we give customers a lot better service. We have 4000 people in the company, half of which are dedicated to providing service for our clients.

In tech support?

A combination—tech support, education, consulting, systems integration, we provide service for all these things. And we're very careful with our clients, and we make sure when they make a purchase of Oracle software that it's a good investment.

To what extent is Sybase a competitor or player in your market?

I don't really think Sybase is a competitor—I really think Microsoft is our competitor.

Isn't Microsoft using Sybase's engine?

Yeah, but that's kind of like saying that General Motors uses Borg-Warner transmissions.

The latest cover story in Business Week talks about the maturing and slowing-down of the computer industry. Most of their data was based on the fact that mini and mainframe sales are way down. But it does seem like a lot of companies are slowing down their purchases. Do you agree with that? Does it affect you?

When you've bought a lot of hardware and aren't getting good return on your investment, you're not going to keep buying it unless you get a good return. There's been a lot of software missing. What enabled this technology to become useful is software, and it's really the absence of software that's slowing down the purchase of everything. When the software catches up with the hardware, people will start using these promising machines.

Various companies have tried in various ways to get their machines into the corporate marketplace, which hasn't historically been a stronghold of microcomputers. Probably the one that everyone is most interested in is how well Apple succeeds in getting the Macintosh entrenched in some of these corporate environments where companies like you are already a very strong presence. What's your take on how successful they're being with that?

Well, let me say that I think the Mac is a sensational computer. I've used Macs and I've used PCs and I think Macs are dramatically better computers than PCs in terms of what they can do. The graphics are wonderful. But a lot of people just won't look at them. It's very interesting. A lot of large organizations still won't look at Macs because, you know, they've standardized on IBM PCs. I'm always amazed at how many people just haven't seen one. It's not even a matter that they've looked at it and rejected it, they just never even looked. There's this incredible inertia in the marketplace. People still buy from IBM because...

"Oracle's whole tradition is to allow you to interconnect all of these different computers from different manufacturers with different operating systems, different network technologies. To treat that network of computers as a unified information and computing resource."

You can't get fired...

Well, I think that's going to change, but I think that's true. They had a virtual monopoly; I mean, DEC is IBM's first serious competitor in 15 years, and IBM mainframes are very difficult to use and very expensive. But if more people saw the Mac, I think Apple would do better yet. They're making tremendous progress, but alongside of that it's still interesting how few companies really have the Macs. Some that do really love them. But it still is a very small percentage.

Do you think that that's based on a general reluctance to rock the boat?

I think that most people haven't seen them. I think strangely enough, Apple still has not promoted their products adequately. People there really don't realize how good the Macs are. I would love to see Apple run an advertisement showing a Mac application next to a PC application. Then you start to laugh. But right now it's just too abstract. You see someone walking into a room, or a kid in college bicycling around with a Mac in a basket, and they're very clever commercials. But the big point is, that if you could see a Mac next to a PC for 50 seconds on a commercial—it's a completely different matter.

Either that, or do some bozo testing and take a completely naive person and see which machine they can do work on faster.

They've shown the output, but they weren't nasty enough to the PC. They should have gotten much nastier. I don't think people realize how much better Macs are than PCs. And the thing that's bad for Apple is their time, their differentiation is running out. PCs are improving now, faster than Macs are improving. 'Cause PCs have such a long way to improve.

I don't really think that was helped too much by the Presentation Manager—an operating system that needs five megs to run.

OK, but five megs isn't going to be a big deal. You know, people do put five megs in their machines.

Well, maybe a few years from now, but that's $1200-$1500.

To corporations, that just does not make any difference.

Really?

That is just not the issue, because if you look at how much the person who's using the machine costs, you pay $100,000 per person. And you get 1200 bucks to make that person dramatically more effective by getting them *Presentation Manager*—it's a no-brainer. People think that memory is going to curb *Presentation Manager*'s impact in corporate America these days—it's irrelevant. A person costs so much more than a computer. *They* make the computer better. You get that return very, very fast.

To what extent do you think those $100,000 guys are using those computers? There's the great myth of the executive who won't touch a computer...

I don't think it's the executive. The $40,000 middle manager costs a corporation $100,000, when you calculate in the office and the overhead

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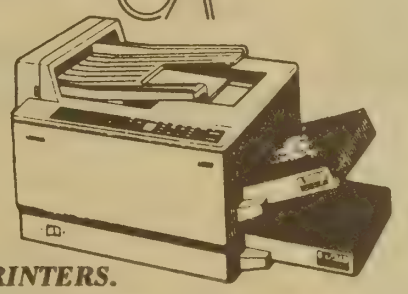

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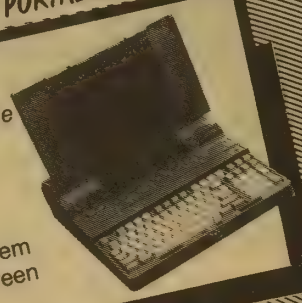

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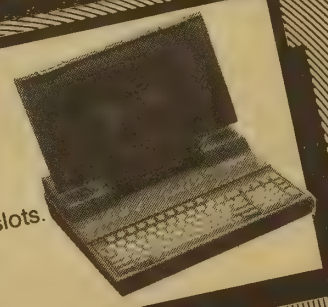

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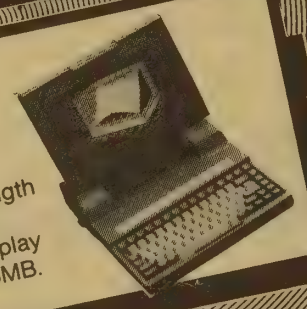

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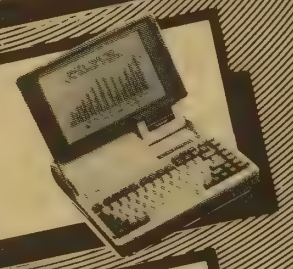

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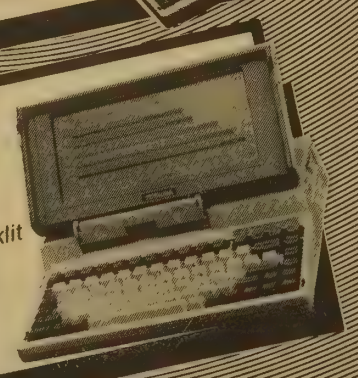

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and everything else. It's not just salaries—it's health care, plus an office, plus all these other things. It costs a lot of money. So why not pay an extra 1000 bucks for some extra memory? It's a no-brainer.

Now, I think *Presentation Manager* is going to be used, not only as a front end for *Excel*, and a front end for Lotus tools, but it will be used as a front end for applications that are networked into IBM mainframes and are networked into minicomputers, and they can replace terminals. So we will see a tremendous proliferation of personal computers replacing dumb terminals. And that will be a huge spike in the sales of PCs—diskless PCs.

Where do you think the OS/2 Extended Edition with the database in the operating system fits into this whole picture?

The database is not in the operating system. It's sort of like me taking a book and taping it to your tape recorder and saying, "Now I've integrated this book with your tape player."

Where does it fit? It would be interesting to see how successful Extended Edition is going to be. I mean, I'm sure IBM has lots of loyal customers who buy from IBM regardless of how bad their products are. Good or bad—it's from IBM.

I don't mean to say that the Extended Edition database is a bad product—that remains to be seen. But it's certainly missing an awful lot of features. I think there will be three major players in the PC database area—real PC databases: Microsoft, Oracle, IBM. And right now in terms of buying intention—we are first, *SQL Server* is second, Extended Edition is third.

Oracle Mail seems to be a unique product in the sense that it sort of elevates Oracle from a database system to a productivity tool. What's the inspiration behind that?

Just that people need tools to send electronic mail between different kinds of computers. *Oracle* is unique in that it runs on all sorts of computers, from very small to very large. And one of the things you want to do when you connect VAXes to mainframes to PCs is to send electronic mail throughout the network. So you need a mail system that runs on all your computers. And there aren't any—except ours. That's the inspiration.

Oracle's whole tradition is to allow you to interconnect all of these different computers from different manufacturers with different operating systems, different network technologies. To treat that network of computers as a unified information and computing resource. One of the things you do to unify that is to let people send mail anywhere in the network, regardless. I'm sitting on my Mac and sending mail to you at your PC and that mail note might pass someone on an IBM mainframe, someone else on a VAX—we will do all of these.

How about CASE (computer-aided software engineering)? I notice that you make some CASE tools. Do you think that's going to be becoming more and more important?

Oh yeah. I mean, software development technology is getting more powerful, allowing you to build applications faster. You want to make sure you just don't build the wrong application faster. So to avoid that syndrome, you got to have a methodology and some computer assists to allow you to capture a model of your enterprise in a database, in a computer model, called an enterprise model, and from that begin to implement your applications—your automation systems.

Without CASE tools, systems analysis, building an enterprise-model becomes haphazard, non-methodical, and has no computer assists. So I think our CASE products are essential to make systems analysts more effective, by making them less like artists and more like engineers. For a long time people thought this was more like an art than a science. Well, its been more like an art than a science for too long. I mean, art is wonderful, but I'm not sure I want to run my auto parts store based on artist's software.

Two of the operating systems you run on are OS/2 and UNIX, in its various flavors. What types of customers are going for OS/2 and which are going for UNIX?

I think the ones that are really loyal to IBM—when IBM says something strategic they write it down—they put up OS/2. And those who are more avant-garde and a little bit radical use UNIX, because it's faster and more robust. So the only thing OS/2 has going for it now—because it has almost no users—is that IBM says it's strategic. If IBM didn't say it was strategic—like, even UNIX is upward compatible with MS-DOS. There's software, from Locus and others—you can get MS-DOS software to run in a window. So, you can't even say, "Well, OS/2 is upward-compatible with MS-DOS—that's what makes it so much more attractive." It really is IBM and Microsoft's marketing clout saying, "This is what we're going to be using, so this is what you're going to be using."

IBM is still unique in the marketplace. They're the only ones who can tell the market what it wants. All the

"For a long time people thought software design was more like an art than a science. Well, its been more like an art than a science for too long. I mean, art is wonderful, but I'm not sure I want to run my auto parts store based on artist's software."

rest of us have to figure out what the market wants.

You've endorsed both UNIX standards—OSF and UNIX International.

Yes, we're notoriously promiscuous.

What was your thinking behind this?

Well, we really have no dog in this fight. If two standards emerge—and I doubt that two will—we'll support both standards. Right now we support dozens of different UNIXes, and we'd love to see it reduced to two—we'd love to see it reduced to one. And we think that there eventually will be one, but in the meantime we're committed to—if customers prefer the OSF product, we'll support that; if the customer prefers the UNIX International product, we'll support that. We just want to reassure people that we will be supporting the output of both those organizations.

Graphics are getting more and more important, and Oracle, at this stage, is not a particularly graphics-oriented product. Does this suggest new directions that you need to move in?

Two years ago we decided to put graphical user interfaces on every one of our tools. In fact, we are unique in that we will not only support things like *Presentation Manager* graphical user interfaces, but we will support all the graphical user interfaces. Whether it's Motif on UNIX, DECWindows, whether it's *Presentation Manager,* or Apple Mac—we will support all of the different graphical user interface standards.

So again—promiscuity is the approach we use. We support all networks; we'll support all operating systems; we'll support all the graphical user interfaces. But all of our new tools are highly graphically oriented, and you can see that the stuff we'll be coming out with in May is quite a radical departure. And we'll continue, by the way, to support dumb terminals—the 3270... But we are heavily tuning our application user interfaces for graphical user interfacing.

Oracle is obviously growing very rapidly. What kinds of growing pains are you experiencing?

Mundane things like having to move to a new building every two years. No longer knowing all the people I see in the hallway.

Sometimes we have concerts here—we bring in the San Francisco Opera or San Francisco Symphony. It used to be that I knew everybody by name who went to these concerts. Now, not only do I not know them by name, but there are some I've never even seen before. I think that's real disconcerting to a lot of people.

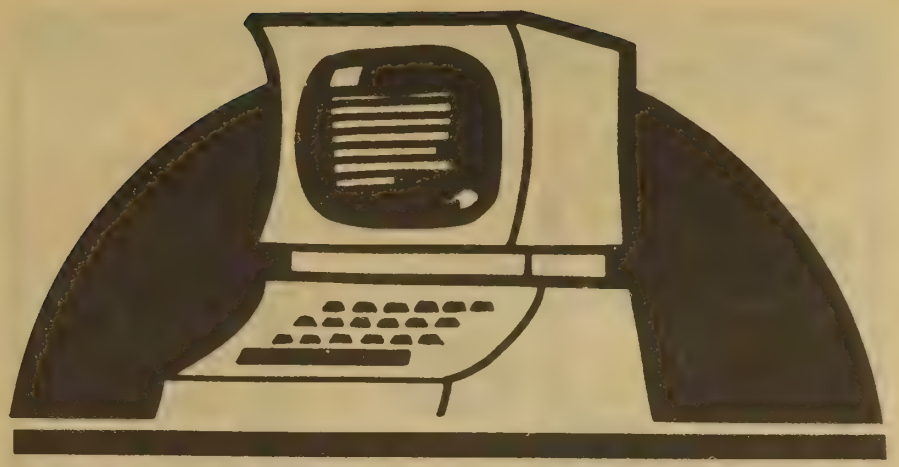
But we're a highly centralized organization, and the individual groups have a very close identity with the products, goal, and services they're providing. So, it doesn't really seem like one 4000-person company. It seems more like, oh, 100 40-person companies.

You do a lot of business internationally. How do you keep people spread all over the world more or less working in the same direction?

Well, they sell the same products. We have regular meetings and we set company policies. But all of our international subsidiaries have managing directors from the country. Oracle France is 90% people from France. And people who aren't from France might be from Germany or from India, or they might be from Holland. They're not necessarily from the United States. Going in the same direction is just a matter of deciding on the company strategy you want to use to sell your products.

Most of your products are sold direct rather than through dealers?

Yes.



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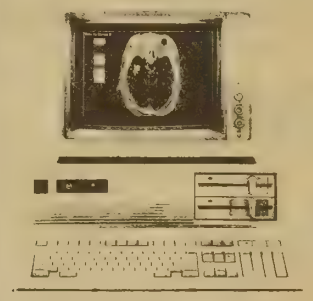

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Is that going to change now as you get into more micro-based products?

Yeah, I think more and more of our products will be sold through the dealer channel. It really remains to be seen—it's going to be very interesting to see whether the dealer channel is going to provide the service necessary to deal with networks. It's a fascinating topic of discussion.

Jim Clark of Silicon Graphics made the point that getting the dealer channels familiar with UNIX systems to a degree where they could function is a very serious problem. You can't walk into Businessland and expect UNIX wizards.

Well, it's worse yet when you include networks. Networks are much harder than UNIX systems. So it's a real difficult problem.

A lot of people will assert that the talents a CEO needs to take a company from the start-up phase to a mature stage are different from those needed to guide a mature company. Do you...

Say that to Ken Olsen. Ken Olsen started DEC—it's now a $12 billion company.

But they've stumbled a bit along the way.

Yeah, everyone stumbles a bit along the way. I hope Oracle stumbles just like DEC—that very same way. Even IBM stumbled over the last few years. I think it's certainly true that there's a turnover in executives from the time you start a company to a maturing of the company—that's true. It's statistically evident. But there are some people who... I think it has a lot to do with whether you're personally inclined, and you're still enjoying it.

A lot of it must have to do with whether a leader can grow with their company. I mean the classic Steve Jobs...

I have tremendous admiration for Steve Jobs. I think it remains to be seen who's the better CEO at Apple.

Steve Jobs obviously thinks the university market is, if not the wave of the future—at least heavily plugged into the wave of the future. Do you agree with that?

No. I think what Steve Jobs believes is that if he can ship his machines to universities, then people leave universities and go to work in businesses. And they have preferences.

Essentially the Macintosh strategy.

People said it's a great first market because people at universities are very avant garde and will adopt new technologies, and they'll write lots and lots of software and graduate a lot of people and eventually they'll be in industry and will have preferences for a type of machine. So it's a great first market for him to go after. It's a wonderful strategy.

Does Oracle run under Mach?

Yes, as a matter of fact we do. We run under Mach on a Bolt, Beranek and Newman Butterfly. So yes, we do run under Mach and we will run on the NeXT machine. Mach is really a pretty easy UNIX derivative to run under. And again, it wouldn't surprise me to see NeXT move, at some point in time—to move from Mach to UNIX System V.4. They'll move to the best UNIX. If they perceive Mach's better, they'll stay with that; if they think UNIX System V.4's better, they'll move to that. I think they'll move to the best UNIX.

Standards, open systems and portability are all very very important. I think people will, more and more, be judging software products and hardware by their adherence to certain industry standards. At the same time innovation won't stop. There will be more creative people like Steve Jobs, who came up with NextStep—a wonderful new user interface. And innovation will continue.

And while there will be standards, there will also be new technology. I think the key thing is for organizations to position themselves such that they can exploit this new technology when it becomes available—not lock themselves into any one vendor's very pricey, very proprietary technology. So what that really means is a gradual erosion of IBM's dominance in the world of computing. Not IBM, the company, but the IBM mainframe. That more and more, it will be sharing automation responsibilities with minicomputers, desktop computers, and workstations.

Personal computers will cease to be known as personal computers and be known as workstations, because the very name "personal computer" is getting to be a misnomer. Because it's personal when you make personal decisions as to what software you run on it—how to configure it. And that's no longer the case. It's like, "We're on an Ethernet, Charlie, and if you want to be on the network... We decided to use the *Oracle* database, so if you want to share data, you'll use the *Oracle* database. And we use these applications for scheduling, and we use this mail system—if you want to be on the mail network, you'll use it." So the notion of making personal decisions and being an autonomous user is gone. More and more, if you want to cooperate with people, it means a lot of decisions have to be negotiated, or handled by someone whose job it is to run this little net-

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"I hope what we don't have is a lot of important people spending a lot of time worrying about the progress of lawsuits. Already the Japanese think the United States is a joke because we have so many lawyers."

work of computers. So again, gradually we'll see this notion of a personal computer recede and the notion of a workstation become more popular. We could form a magazine called *Personal Workstation.* Get that name, because I think that's where they're going to be.

Are you in the process of hitting any technological walls? The DRAM shortage strikes me as one of them that's sort of inconvenient.

Well, it's really hurt Apple. I think that's kind of a short-term, interesting problem—us becoming too dependent on the Japanese and the Japanese being smart enough to recognize that and make a few bucks. I admire them for that. I don't admire us for being in that position.

The technology potential is extraordinary out there to continue to move ahead rapidly. And no—I don't think it's a technology issue, I think it's not an issue of technology creation—more an issue of technology transfer. There's great technology in the world. The question is how do we deploy it to our customers and make sure our customers successfully use it to solve their enterprise problems?

That's where we're breaking down—not in technology creation, but in technology transfer. Unless we as vendors and dealers start focusing on the issue of technology transfer, service, and support—this technology is going to languish. It will languish in research labs and it will languish on customer's desktops—unplugged, or sitting there. I still love the guy who comes in with the PC and hits the button and it says, "At nine o'clock you have this; at ten o'clock you have this." All he uses the PC for is to see what his schedule is every morning—great use of a workstation! Paper and pencil is much more effective for a job like that.

Could you explain the online transaction processing features that are in Oracle's Version 6?

Very exciting stuff.

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There seem to be a lot of lawsuits these days. Ashton-Tate sued Fox Software; Lotus sued Paperback, etc. What do you, as an industry leader, think of this trend?

I hope that we're not an industry that's governed by some of these lawsuits. I hope what we don't have is a lot of important people spending a lot of time worrying about the progress of lawsuits. Already the Japanese think the United States is a joke because we have so many lawyers. I mean, they have more engineers than we have—by a slight amount—they have about 10% more engineers, and they're half the size of our country. But we have more than 10 times the number of lawyers. And they think that's pretty amusing.

The more time you spend in litigation, the less time you spend in innovation. It's just a tragic waste of human resource to argue about that. I'd almost prefer going back and just getting guns and shooting each other. At least you get the decision more quickly. ■

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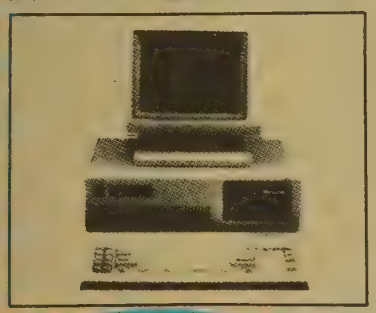

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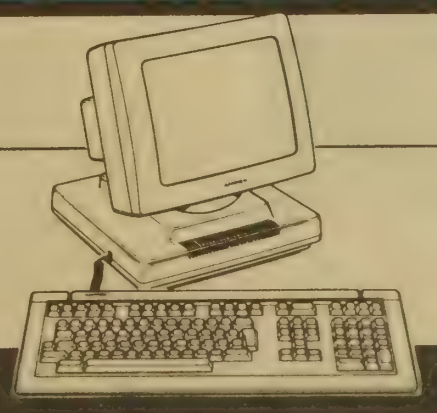

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H A C K E R S

It's as current as today's headlines—"Hackers" perpetrating yet another outrage against some network, or using their expertise to sell secrets to the Soviets, or breaking into yet another virtual universe where they're not supposed to be.

Not even the Hackers Conference itself, an annual gathering which incorporates some of the industry's founding fathers as well as latter-day wizards into its ranks, is insulated from the institutionalized misuse of a term which, in the hallowed days of MIT, was a badge of honor. The most recent conference last fall was the target of a sensationalist hatchet job by CBS News, which led to impassioned discussion not only of media distortion but of whether the name itself should be abandoned. (In one of life's nicer ironies, as the Internet "virus" made its well-publicized rounds, CBS found itself interviewing the selfsame hackers it sensationalized the previous week, several of whom were instrumental in eradicating the rogue code.)

We offer herewith some perspectives on hackerdom. The Rev. Barlow offers his analysis of the situation; Bob Bickford, an organizer of the Hackers Conference, attempts to rescue the term from its abusers; and finally, from the closing discussion of last year's conference, the hackers themselves speak out on issues of interest.

PHOTOS: MARY EISENHART

Chuck Moore (l), author of Forth, and Steve (Computing Across America) Roberts consider a dubious proposition.

Hackers listening to alternate versions of the future.

The Empire Strikes Back

We Are Not Amused

By Rev. John Perry Barlow

So I'm manning the Hackers Conference registration desk when I'm suddenly eye-to-bugeye with the bombed-out visage of Cap'n Crunch, the original phone phreak and King of the Outlaw Hackers. I'm told he always looks frantic. He does.

"Like most of them, Draper approached Ma Bell with a pure heart. In all of his transcontinental electronic excursions he rarely called an actual person."

"Hey, man, I gotta have a new name tag. This one's too conspicuous." He tore at his Hello My Name Is John Draper as though it were the Mark of Cain.

"What's the problem?" I wanted to know.

"Them!" he snarled with a directional jerk of his head. I followed its hazy vector to a camera crew clearly marked CBS. And I was as startled as he was. I had thought that the Hackers Conference was about as open to the press as a meeting of the College of Cardinals. Why else would we be sequestered away in the hills if not to avoid this newest and most myopic of All-Seeing Eyes?

Not that it bothered me much. Most of the experiences I'd had with the press were positive. I'd found that all I had to do was make friends with them. It's hard to speak too falsely of one's friends. In the narrow corridors of Wyoming politics or around the Grateful Dead, this is easy enough to accomplish. Once she was a friend, you could give a reporter as much of the truth as she'd tolerate. If it's entertainment one's after, the truth is usually more entertaining in its weirdness than anything a person can make up.

So while I hadn't expected this video crew, fear of them didn't toss me under the table either. But my minor celebrity is an easier thing to bear than John Draper's. His began back in 1971 when *Esquire* magazine did an article about the first real hackers, a group of the criminally curious called phone phreaks. These

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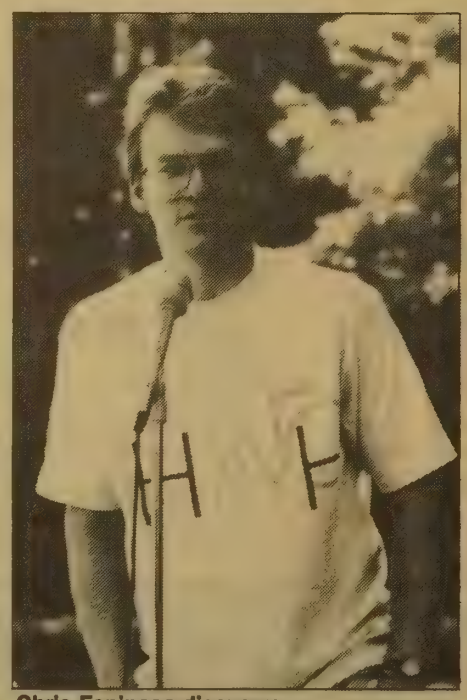
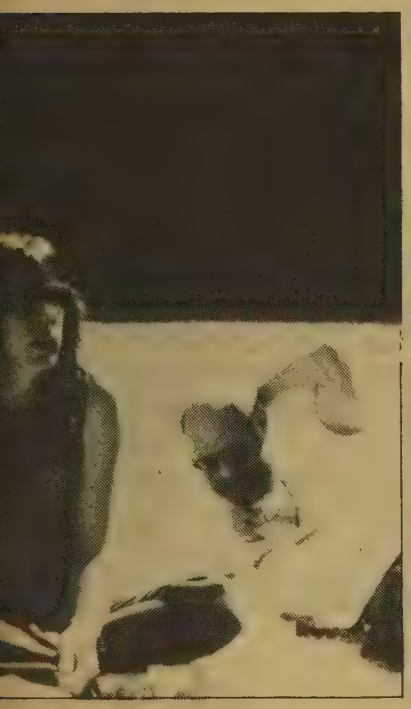


Chris Espinosa disavows responsibility for Apple's price increases.

Russell Brand, who went on to vanquish the Internet worm at Lawrence Livermore.

EVISITED

Ted Nelson contemplates his next big idea.



Fearless correspondent Brock Meeks.

Hackers Speak

The following remarks are excerpted from the public forum which traditionally closes each year's Hackers Conference. In 1988, the initial question was "when will computers be as ubiquitous as cars and telephones?" The discussion took off from there.

Chris Espinosa: "I think the assumption that computers are ever going to be as simple and as taken for granted as cars and telephones isn't a valid one. Because I think that regardless of how we try to simplify the technology, there's always the urge to do something new, and whatever's new is going to be by definition interesting, and by [being] interesting it's not going to be immediately obvious to a lot of people.

"So I think computers, even if they become as ubiquitous as cars and telephones, will never be as essentially obvious as those are, and there'll always be a point where you have to learn about them, just because there'll be something new to learn. The great thing about them is that they're a blank canvas. A telephone's not a blank canvas. A car is not a blank canvas. The computer's a blank canvas, so it'll never be as simple and as taken for granted as cars and telephones."

Brett Glass: "Computers will become ubiquitous in our homes when they fundamentally improve the quality of our lives. That's when we're going to see them everywhere."

Todd Rundgren: "I don't think it'll happen before people realize, in the same way they did with the automobile, if this analogy is extensible, that they put a value on what comes out of it. And that isn't necessarily a good thing, because by extension the automobile metaphor—we got places faster, which essentially allowed us, in most cases, to shovel a larger pile of bull****.

"So just getting them ubiquitous isn't necessarily an objective, I don't think; people have to realize the value, and sometimes making people realize the value is a completely false concept, because maybe they really don't need it anyway. And maybe we're just trying to extend our mentality onto people who don't care now and maybe never will care."

Chip Morningstar: "I think computers aren't going to become ubiquitous in people's houses until somebody comes up with a good answer to the question, 'Well, what the hell good are they anyway?'

"In some sense, I think we're not technology-limited to nearly the same degree that we're imagination-limited. I couldn't live without some kind of computerized word processor for writing, but most people don't write. Most people in their day-to-day lives in this country couldn't care less about word processors or spreadsheets or any of those things. They don't use those things. And until you can come up with something for them to do, something that's useful to them, I don't think you're going to get any kind of penetration. So what we have to do is figure out something for these things to do that's actually going to make people want them. And

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"In some sense, I think we're not technology-limited to nearly the same degree that we're imagination-limited."

Are You A Hacker?

By Bob Bickford

Some time ago (*MicroTimes*, January 1987) I defined a Hacker as "Any person who derives joy from discovering ways to circumvent limitations." Unfortunately this definition has yet to make the evening news in the way that a teenager who robs a bank with his telephone does.

The criminal Hackers, or "Crackers," have been making news while the rest of us are virtually invisible. For every irresponsible fool writing a virus program, there are at least 20 software engineers earning a living discovering ways to circumvent limitations. When the much-publicized InterNet worm was released by an irresponsible Hacker, hundreds of other Hackers applied their considerable talents to controlling and eradicating the problem: the brilliance and creativity brought to this task are typical of hacking as I define it.

Working on the yearly Hackers Conferences has been a mixed experience. On the one hand, helping to bring together 200 of the most brilliant people alive today, and then interacting with them for an entire weekend, is immensely rewarding. On the other hand, trying to explain to other people that a Hackers Conference is not a Gathering Of Nefarious Criminals Out To Wreak Havoc Upon Western Civilization gets a bit wearing at times. Trying to convince a caller that repeatedly crashing his school district's computer from a pay phone will not, emphatically not, qualify him for an invitation to the

"...trying to explain to other people that a Hackers Conference is not a Gathering Of Nefarious Criminals Out To Wreak Havoc Upon Western Civilization gets a bit wearing at times."

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The Empire Strikes Back

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were people who failed to appreciate the sacred nature of America's precious communication network and devised ways to enter it without paying or otherwise playing by the rules.

Like most of them, Draper approached Ma Bell with a pure heart. In all of his transcontinental electronic excursions, he rarely called an actual person. Exploring the system was more his object than ripping it off. Like a bright six-year-old in front

"The most important thing to know about hackers is that they are funny. They are as funny as physicists and in much the same way. They share the physicist's affection for word play, puns, and anagrams."

of a Macintosh, he just wanted to understand the damned thing.

The authorities were characteristically weak on such a fine distinction as this. They read the *Esquire* article and found him as easy to track down as Jobs and Wozniak had. They busted him once in 1972 and then, when he'd almost reached the end of his probation in 1977, busted him again with something that looked a lot like entrapment. This time he went to jail, there to contemplate what happens to famous enemies of the phone company.

He wasn't the only one to get jumpy about the CBS crew. The registration desk was widely (and incorrectly) thought to be an information node. Over the course of the afternoon, I was asked many apprehensive questions about *them*. Who had them in, what did they want, etc.

I thought everybody was being paranoid. But that's my stock response to suspicion of any sort. Even when it's proven wrong, I'd far rather go through life regarding fear as a pathological ailment than a necessary condition for survival.

My duties at the desk were limited. I passed out special conference t-shirts (most of them extra large), made up name tags, provided bunk assignments, and passed out a form which Lee Felsenstein had cooked up.

Lee is one of the patron saints of California hacking. He founded the Homebrew Computer Club (with Gordon French and Fred Moore), designed the Osborne, and has sunk his life's work and earnings into a digitized proletarian hookup called Community Memory. Lee's form was a very analog part of the process.

It asked: "What's your claim to fame? What's your secret claim to fame? Set down at least seven associational words which (partially) describe you." It also asked for current age in earth years and at what age the respondent peaked.

This information was to be grist for Lee's mill later in the evening, when it was his grand ambition to single-handedly roast everyone at the conference. Grabbing forms at random, he would summon the authors to the dais and interrogate them on their answers. Like some of Lee's other ideas, this one was a little longer on inspired good will than ease of execution. By the time he'd worked over the first battery of roastees, I realized that wading through the entire stack of forms would take 'til Halloween.

But I was also ready to sit through it for the duration. It was very funny. The answers themselves were pretty amusing, in a nerdy sort of way. Like the kid whose seven associational words were: "five, three, six, one, two, four, seven," or the fellow who said he worked as a "Rocket scientist for Yoyodyne Propulsion," and whose secret claim to fame lay in being the Buddha. Stuff like that.

The most important thing to know about hackers is that they are funny. They are as funny as physicists and in much the same way. They share the physicist's affection for word play, puns, and anagrams. They like Lewis Carroll and *Finnegan's Wake*. They understand the holy value of the prank. They enjoy incongruities, whether computerized bicycles or bicyclized computers.

This is not surprising when you think about how humor works and what it can do. In that sacred moment when a joke happens, two sets of assumptions come together in way that briefly annihilates them both. Until normality has been restored, there is a fertile confusion. For however short a time, the joke has blasted open a window of opportunity for creation. I suspect that this is why Schopenhauer said that humor was the only divine quality to be found in humanity. The same attributes that make humor a virtual necessity to creative people render it suspect to those who place a lot of importance on punctual trains.

Before this deadly century, humanity seemed to have a proper high regard for the wisdom of laughter. We deified the Trickster. "Primitive" mythology is a laff-riot of these vexing deities, coyotes, ravens, rabbits, monkeys. The Europeans had Hermes, Thoth, Loki, and The Fool from the Tarot deck to Shakespeare.

The closest we've come to a mythical trickster lately was Charlie Chaplin's Little Tramp, an image which has since been co-opted by one of the least light-hearted institutions this side of the Iron Curtain.

Real sideways laugh-the-sludge-out-of-your-head humor has become an hermetic art, squeezed into such isolated provinces as AA meetings, linear accelerator control rooms, and computer labs. Meanwhile, out there in Televisionland, they seem to think that Bob Hope and *Saturday Night Live* are both still funny. They're even developing a taste for the wit of George Bush. It's as if the only good jokes were private.

Which gives them an even stronger adhesive function in binding community. Laughter unto tears is profoundly uniting to all who share it.

While Lee Felsenstein is having his way with the hackers, the CBS camera crew takes it all in. Gradually, by their whispered consultations with him, I realize that the fellow sitting two chairs away from me is the "reporter," the talking head who will tell this tale. It is a chilling discovery. He is not laughing. He isn't even occasionally smiling as most folks do in the presence of a joke they don't get.

Indeed, he has the pig-eyed choler of a Joe McCarthy which only sulls darker as the evening ascends into lunacy. He isn't even taking notes. He just sits there, sour and barely present. And this was the man whose impressions of the affair will, by tomorrow evening, be shared by several million Americans.

For a crazy moment, I want to drape my arm around his shoulders and include him in the fun. I want to murmur conspiratorially about what a pleasant and interesting world it will be after the hackers have taken over, coaxing his shy nods into enthusiastic grins. No dice. He is radiating like plutonium. He is in The Zone.

The Zone is my current working name for what I believe to be the most common human emotional state. It is where most people, myself included, pass much of their quietly desperate lives. To the best of my knowledge, it's never been named before. In the Zone, nothing happens.

By this I don't mean that The Zone is a halcyon and serene mental condition. Its only correspondence to those states aspired to by Oriental mystics is outward dispassion. It's more like being in an iron lung than any condition you'd achieve by sitting Zazen. Rather than being detached from the illusory world of perceptions, one is painfully separated from a world which seems quite real.

When one is in The Zone, all the things that make life worth surviving...Beauty, Truth, Discovery, Love, Adventure, Sex, Joy, Laughter, the Perception of the Holy...are too much trouble. One eats and sleeps and does as little as is necessary to protect the future presence of these two amenities. When someone is Zoned Out, he doesn't simply say "If it ain't broke, don't fix it." He says, "Don't fix it." Period. Don't move. Accept no information. Do not, under any circumstance, rock the boat.

In The Zone, one is paralyzed with boredom, and because he is paralyzed, incapable of doing anything about it. No actions are possible while Zoned Out, but one remains capable of all the worst emotions. The Zone is quite congenial to fear, resentment, anger, suspicion, jealousy, and guilt. It is the homeland of low self-esteem, ruled by the reptilian proto-brain at the base of the skull.

"The man from CBS didn't wake up. He didn't have to. His story had been written for him long before he came looking for us. By confirming the Zone-old suspicion that smart people are out there plotting against you, it would disturb no one's daze."

I'd be inclined to call it Evil, but that term's probably too archaic for modern tastes. You might relate it more comfortably to Freud's notion of Thanatos or, if you're really a child of your times, to what Luke Skywalker called The Dark Side. But there's no need to drape black bunting all over it. It's bad enough all by itself. Absolutely no one likes being in The Zone. What's peculiar is that not only do we allow it to exist, we encourage it.

Which brings me back to television. McLuhan's characterization of TV as a passive medium has never seemed more accurate to me than it does now. And I'm beginning to wonder if the principal purpose of television isn't to give the appearance that its viewers are doing something.

The Zone induces catatonia, but sitting in one's living room and staring into space is not yet socially acceptable. We need something which we can appear to be watching, something which moves and makes noise,

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The Empire Strikes Back

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but does not disturb our narrowed consciousness with actual information.

So TV unreels shootings, stabbings, beer commercials, and jock fests to half-lit souls who know only that they don't feel very good and that they might feel better if they went out and bought something.

While I believe that The Zone has always been a basic human condition, twilight seems to be advancing across the American mind more rapidly than ever. Possibly it's a response to datashock. Like snoozing children in the back of a car, we don't want to be awakened to the information of arrival. We just want to go on sleeping.

"Buddha," by the way, is Sanskrit for something like "He who woke up."

The man from CBS didn't wake up. He didn't have to. His story had been written for him long before he came looking for us. By confirming the Zone-oid suspicion that smart people are out there plotting against you, it would disturb no one's daze.

The next evening his voice could be heard throughout the land announcing that: "A small revolutionary army is meeting in the hills above California's Silicon Valley this weekend, plotting their next attacks on the valley below, the heart of the nation's computer industry. They call themselves computer hackers." Next attacks? These people *created* the nation's computer industry. Now they were guerrillas in the hills.

It got worse at once. Hackers, we were told, were capable of creating "never before dreamed-of crime. Because for a computer, the only difference between a hundred and a million is a few zeros." And so, seamlessly into Donn Parker, computer crime expert at SRI, saying, "In fact, criminals today have a new problem to deal with: and that is 'how much should I take?' They can take any amount they want."

Cut to the office of Richard Fitzmaurice of Pacific Bell. Mr. Fitzmaurice has the same porcine sobriety as the CBS reporter. You could examine his face with an electron microscope and never find a laugh line. He is certainly not laughing now.

Instead he comes on with a Jack Webb voice and the following verdict: "You'll hear the term computer hacker, computer cracker; we call them computer criminals."

Next CBS ran some footage of a entirely wigged-out astronomer who described, rather pleasantly, the mouse-like entry of a cracker into his Defense computer. His hair looked like sparks from a Van de Graaff generator and he was playing with a yo-yo during the interview.

This clip seemed totally gratuitous until I realized its impact on someone watching from The Zone. "Story's about some kind of computer geeks...here's one of them educated fools now...why, this weirdo must be a hacker. So that's what they look like!" Icing the cake, the fellow's an astronomer. A recent NSF poll revealed that 21% of American adults think that the Sun orbits the Earth. Which should tell us a lot about the credibility of astronomers...

Quick back to Donn Parker who says, in summation, "A hacker today is an extremely potentially dangerous person. He can do almost anything he wants to do in your computer."

The final shot of the story showed an amazingly violent video game in progress in the Hackers Conference computer room. There were still no hacker faces to be seen, only the backs of woolly heads staring into the cathode ray battle zone. The voice-over injected this note of balance: "But at the hacker's camp in the hills, there's recognition that in any revolutionary army there will be a few rogues and criminals. But that's no reason, they say, to slow down the revolution."

It was Zone journalism at its finest. In less than five minutes, we had been tried for both treason and the grandest larceny, convicted on both charges, and all without the appearance of a single one of the accused. CBS didn't *need* Cap'n Crunch.

> **"These people were dangerous ...they had economic authority. In their heads lay the fields and ore seams of future industry."**

Gradually I remembered the last time I had been part of something so intentionally demonized by the press. It was in 1966 and I had just helped found a chapter of SDS at Wesleyan. We were still high on concepts like participatory democracy and working within the system for social change. A TV station from Hartford covered one of our meetings and returned with the previously simulated news that we were preparing an armed insurrection.

Some years later a few of the people in that group were bearing arms

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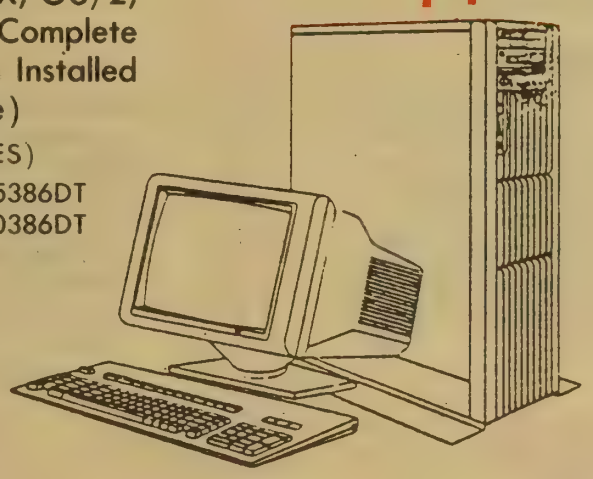

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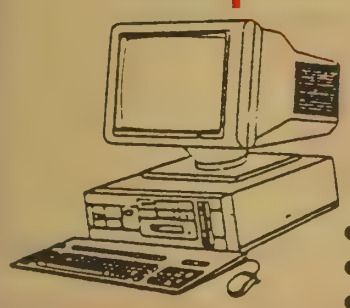

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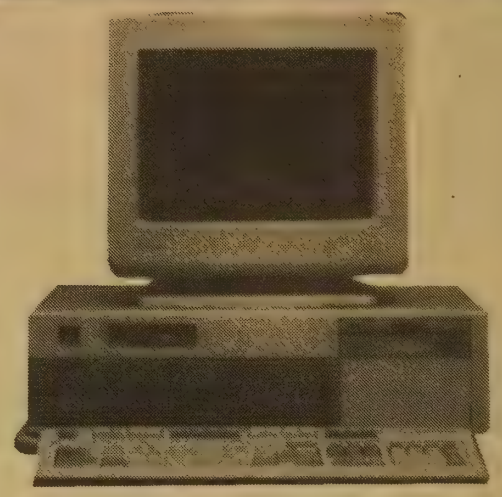

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The Empire Strikes Back

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against the state. I always wondered whether they didn't just decide that it were as well to be hung for a sheep as a lamb. Figuring, in other words, that if you've been judged guilty, you might as well by God be guilty.

The parallels were worth considering. 1966 was the last time I found myself around so many people who were not only so interested in basic social change but had the intellectual means to bring it about. In fact, the hackers had it in them to be a great deal more powerful than my college classmates. These people were dangerous in a way which America has always credited with reality: they had economic authority. In their heads lay the fields and ore seams of future industry.

If they became persuaded of the charges made against them by CBS, they could cause trouble on a scale which would make the Weathermen look like a prayer in a tornado. Things would happen which no one at CBS would be able to describe accurately. Even in the unlikely event that he wanted to. ■

Hackers Speak

continued from page 53

until they want them, they're not going to have them."

Mike Perry: "Computers in every home may not be that important, but the ability of computers to allow individualization of products in lots of little companies whose products will be in every home—*that* will revolutionize people's lives. I can't buy a pair of shoes that fits me. It's very difficult. Now, that's important to me, and when I can get something custom made trivially because everything is custom made, my life will be better. And that will happen in the not-too-distant future. The Industrial Revolution was important because it provided abundance through uniformity. This revolution is important because it provides diverse abundance."

Todd Rundgren: "I wanted to make a comment about the danger of expecting computers to do things that we traditionally expect people to do, like, for instance, talking. And making certain kinds of decisions for us and expressing an aesthetic. And things that we traditionally expect for other human beings. This is the inherent danger in the ubiquitousness of technology. You know, nobody was ever prevented from expressing themselves with the tools that we already have. The problem is that people don't do it already, and there's certainly a danger of us abdicating the little bit of creativity that we still retain for ourselves to machines. That, to me, is the most dangerous thing of all."

David Oster: "I wrote the last nine versions of *Stars* on the Macintosh. My program was running on the Mac in the office. Somebody came into the office and said, 'Is that a real program, or did somebody write that?' So long as ordinary guys believe that commercial products are gifts of the gods, so long as they believe that they're out of their reach, we're going to have this dichotomy between those who have the tools and those who don't. Until we teach rock and roll music in our high schools, until we teach video production in our grammar schools, we won't have the revolution."

Scott Wiener: "I've got a couple of things. There's something I've been thinking about, and that's this analogy to the food chain. The information chain. There's information providers, there's various levels of abstraction. And we're all in the generation that made the transition from reality being experience to reality being the experience of television. We are the watershed generation. What's happening now is that we're moving higher and higher up the food chain. More and more information is about other information that's been collected from other second sources. And we're eight, nine, ten generations removed from the original.

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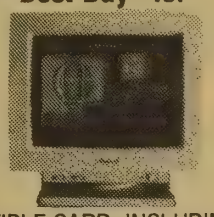

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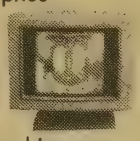

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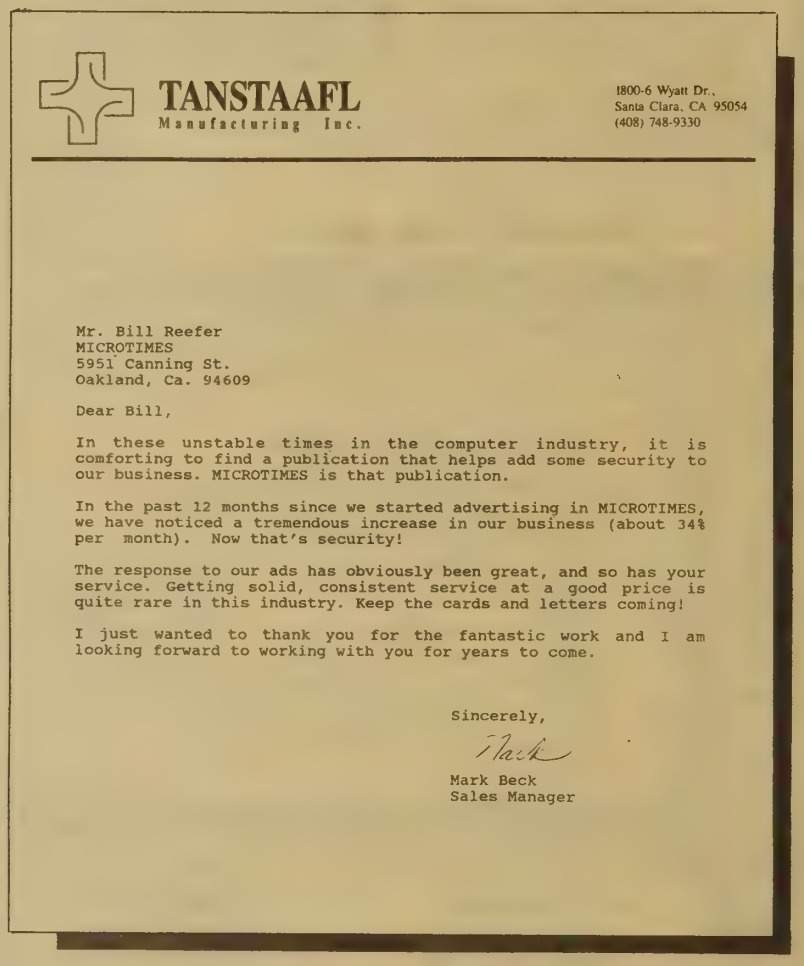

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Sales Manager

Mark Beck is Sales Manager for Tanstaafl Manufacturing, Inc., one of the leading manufacturers of printer sharing units, located in Santa Clara, CA.

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Hackers Speak

continued from page 60

recorded by VISA. VISA signed a contract giving the rights to that information to TRW, for free. They give TRW the information. This has been in place for all the major credit card companies. TRW puts it in a big database and sells it back to VISA. Okay? It's your information, you can't even get at it. So when I hear we're going to have satellites, that we can look around on, believe me, when there's profit in what you do in your life, you're not going to own what you do in your life."

Allen Baum: "It's probably a cliche that knowledge is power, but we've seen it yesterday—CBS is broadcasting stuff, and they control it. That's a lot of power.

"TRW has a lot of information there and they have a lot of power, and I think the only way that hackers are going to change the world is to enable people to manipulate that information so that they have their own power. One of the best ideas I heard was simply teaching TV production techniques in schools, letting them see what the networks are doing. Teaching computers in school, letting them see what TRW is doing, so they actually see what's going on and they can actually decide for themselves what it is that they're seeing."

Steve Roberts: "A quick personal perspective—I've been traveling for about five years, and a pretty common question is 'where do you call home?' And I finally decided that home is data space, home is this network of information systems that I live in, and ham radio—it all sort of boils down to information. And what's happened from that is my neighborhood has become global, and it's an unusual sort of perspective, because I have this sort of enclave of stability, as Toffler said, that is entirely made out of information, and the key point is that it has no geographical limits.

"I think one of the most important things that needs to be hacked is the system of artificial boundaries that's made by governments. You know, we have a lot of artificial lines crisscrossing this planet which have nothing to do with people and nothing to do with any kind of reality or information or anything else. And people crossing those lines are harassed, there are information tariffs, product tariffs, all these things that have nothing to do with us.

"...I finally decided that home is data space, home is this network of information systems that I live in, and ham radio...."

"And it seems to me that with these tools, we're just about the only subculture that has a set of extremely powerful information tools that sort of supersedes the kinds of things the governments find important. You know, we can all communicate with each other, we can do packet radio and networking all over the globe, and if anything at all needs to be hacked, it's the relationship between these tools and the planet that supports them. So I think it's time to open a few more doors." ■

Are You A Hacker?

continued from page 53

conference can be a bit annoying. None of this would be a problem if we hadn't let a small minority—the Crackers—steal the show, and become associated with the word "Hacker" in the minds of the general public.

I write software for a company that builds medical image processing equipment. My code controls a product that can, and often does, improve the quality of medical care, reduce its cost, or both. I derive great pleasure from working out new designs (or improvements). I have a great distaste for any limitations. When I develop a piece of software that works around some barrier, I tend to have a silly grin plastered across my face. When some ignorant reporter writes a story that equates the work I do with expensive but childish pranks committed by someone calling himself a "Hacker," I see red.

Are you a Hacker? If you want to break rules just for the sake of breaking rules, or just to inflict harm upon some perceived enemy, forget it. But if you delight in your work, almost to the point of being a workaholic, if finding the solution to a problem can be not just a satisfying, but almost an ecstatic experience, you probably are. If you sometimes take on problems just for the sake of finding the solution, then you're in good company, with virtually every inventor whose name appears in your high school history book, and with the many thousands of brilliant people who have created the "computer revolution." ■

Copyright © 1989 by Bob Bickford. All rights reserved. *Bob Bickford lives and works in Marin County, often Hacking late into the night, and (usually) enjoying it immensely. His wife, Greta, only tolerates this because she's an animation hacker and sometimes does the same thing. Bob can be reached through uucp at well!rab.*

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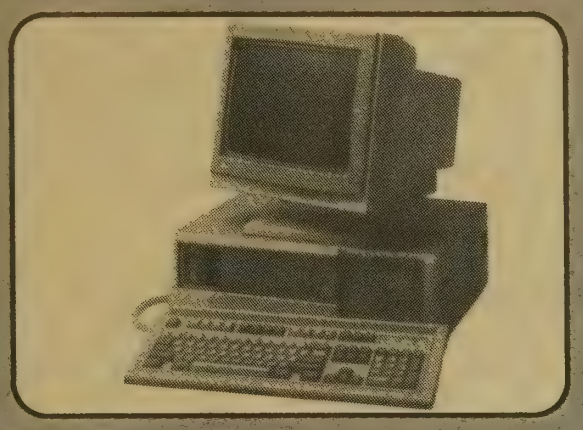

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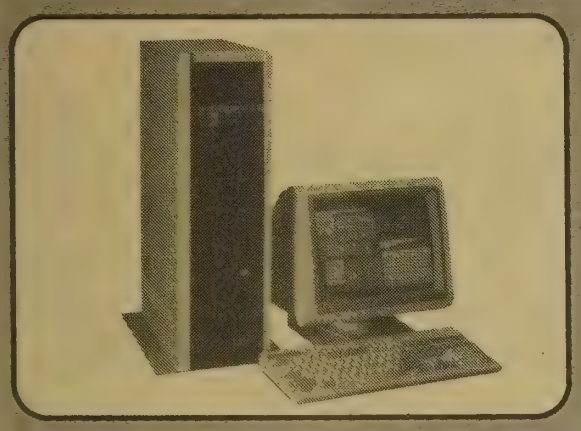

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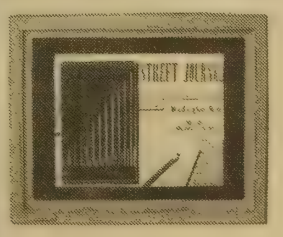

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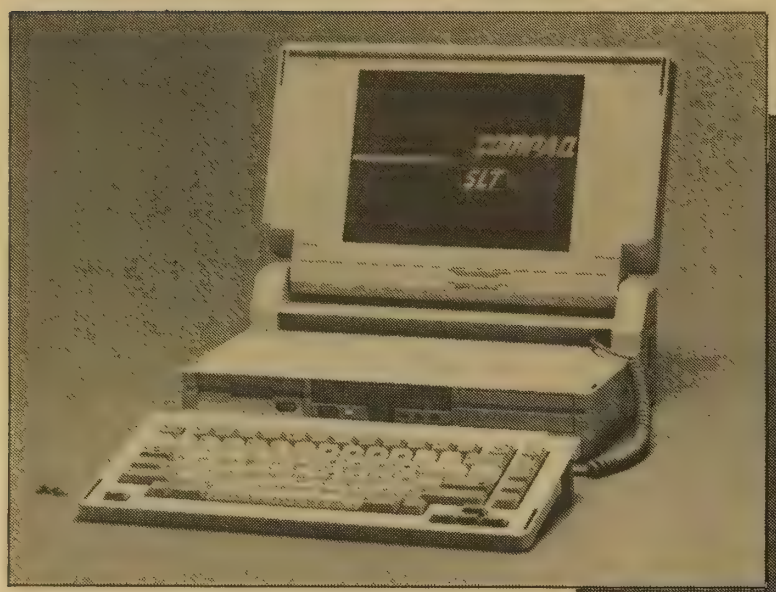
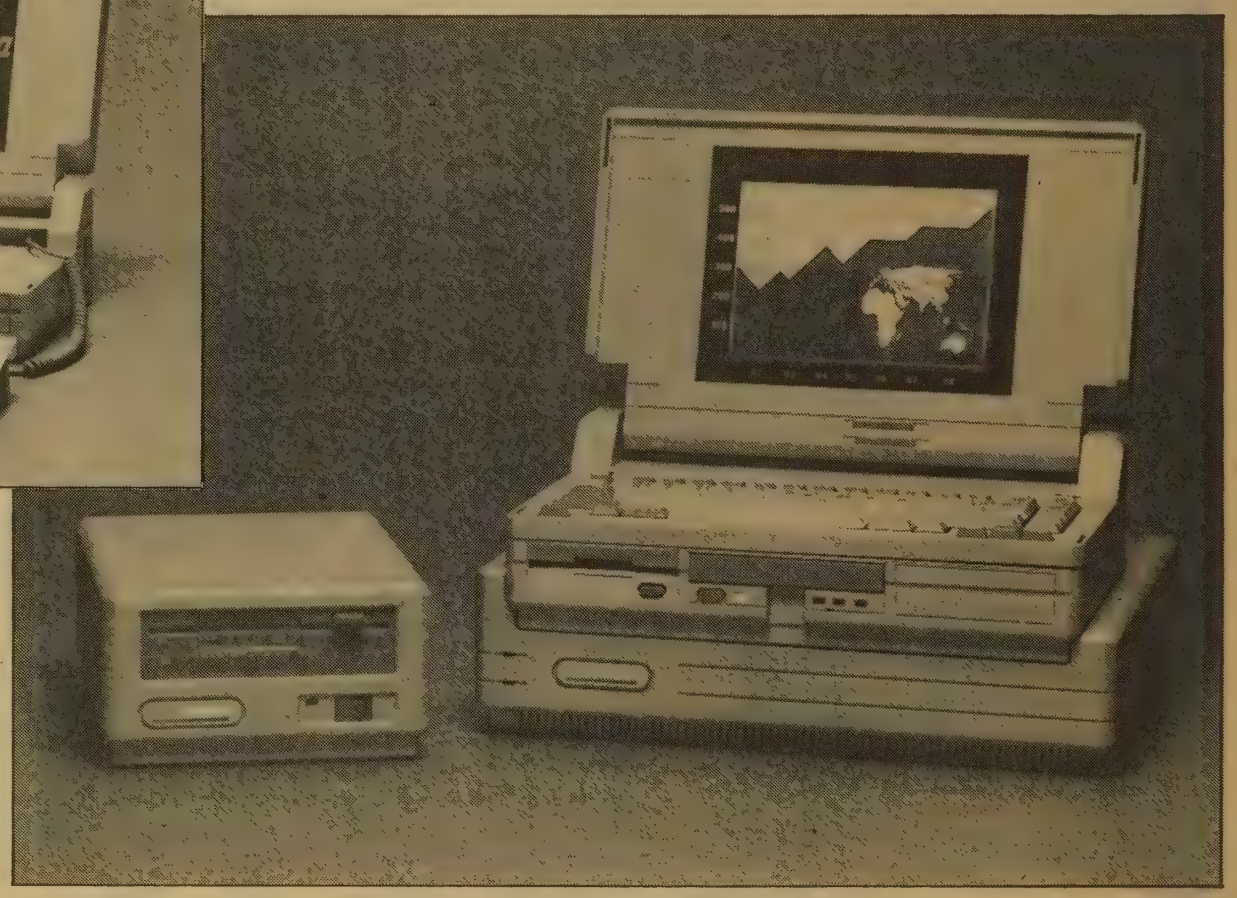
The Compaq SLT/286

A State-Of-The-Art Laptop

By Ed Kahn





The Compaq SLT/286 (top) works well as a laptop but can be converted to a desktop computer with the optional Desktop Expansion Base that includes two expansion slots (right).

When Compaq Computer Corporation introduced its first computer in 1982, it established itself as a major player in the IBM compatible field. This first computer was a winning combination that offered PC compatibility in a luggable package. It had a major impact on the IBM world, and established high standards for clones.

It has always seemed strange for a company that made its initial reputation on full power in a small space not to have offered a laptop computer. Compaq has always maintained that it would not release a laptop until it could do so without compromising features. With the introduction of the SLT/286, we have cause to appreciate Compaq's adherence to high standards.

As one might expect from Compaq, they have forgotten nothing. They claim desktop computing in a laptop, and they come as close as I have seen to delivering the goods.

The SLT/286

Right from the first impression, this box is distinctively different. First, it looks more like a lunch box than a laptop. Its dimensions are roughly 4" X 13" X 9", and it weighs in at 14 pounds. The top hinges up to reveal a backlit 10" diagonal display and a keyboard, which can either stay in place or lift off to go anywhere within the range of the connecting cable. The keyboard has little feet that can extend to make it much like any conventional keyboard—except that there is an embedded numeric keypad and an "Fn" key to activate secondary functions for some of the keys.

A stand-alone numeric keypad ($149) can plug into the keyboard. When placed beside the primary keyboard, it looks much like a conventional keyboard. Unlike so many laptop units, the Compaq keyboard has full-size keys and LED indicators on the NumLock, Caps Lock, and Scroll Lock keys to show whether they are on or off. As with any keyboard, evaluating the feel is subjective, but I am able to work at full speed with this setup. On the back of the computer, however, there is a port for connecting your favorite keyboard if you prefer.

The SLT/286 is powered by an 80286 chip running at 12 MHz. It is fast—11.5 on the Norton scale. The computer comes with only 640 K of RAM, but is expandable to 3.6 Mb, in units of 1Mb which retail for $799 each. As a stand-alone portable, the computer is powered by an internal NiCad battery pack which weighs less than two pounds and fits into the unit under the keyboard. Generally I pre-

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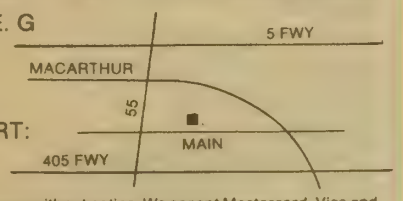

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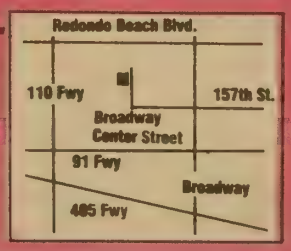

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fer a battery system that is removable, but this battery is so lightweight that I have no objection to either its weight or placement. If you want to save the weight, however, you could remove the battery, as the computer runs perfectly on the (included) AC adapter.

Unlike any other laptop power supply I have seen, the Compaq unit automatically switches from 110 volt to 220/240. This means that use in areas with different electrical standards should involve no more than getting an adapter for the plug. The AC unit serves both as an adapter and a battery charger. The charge time is about an hour and a half if you are not using the computer. If you charge while using the system, it may take as long as three hours. In either case, a light on the power supply tells you whether the battery is fully charged or charging. The battery pack will power the system for up to three hours. Additional batteries list for $129. They are light enough so that it is practical to take a couple along for extended periods of battery operation.

The standard configuration includes a high-density 3 1/2" drive which holds up to 1.44 Mb of data and a 20 Mb hard disk with an access time of 29 ms. In addition, however, if you purchase an External Storage Module ($299) you can add either a 360 K or high density 1.2 Mb floppy drive, both of which carry a list price of $275. If you prefer, you can install a 40 Mb tape backup ($799) in the External Storage Module. The computer is available in a 40 Mb configuration for an additional $600.

Display

The backlit display is the best I have seen so far. It features white letters on a silvery-grey/black background, providing wonderfully clear displays. The computer uses the VGA graphics standard, which provides a resolution of 640 X 480. Up to eight shades of gray are available. If you want full color, a VGA monitor can be attached to the provided port.

Even though the backlit screen is only monochrome, the gray scales give the appearance of extra colors. In *WordStar*, for instance, menus look like they have a pale yellow in addition to the standard white-on-gray. There is great flexibility in the way the system can be configured. By setting the default on reverse video, you can have a black-on-white display which closely resembles the appearance of a typewritten page.

Laptop computers continue to improve, and today's best units inevitably will be surpassed. For now, this is the unit to beat.

The Desktop Laptop

This laptop really can serve as a full-time computer. Besides the VGA interface, there are serial and parallel ports. But the expansion possibilities do not end there. A connector will let you easily add a Desktop Expansion Base ($999) which provides two full-length slots as well as all the standard interfaces. This means that you can connect a full-size color monitor, printer, and keyboard of your choice. You merely unplug the SLT/286 from the Desktop Expansion Base when you want to use the computer as a portable. Two expansion slots doesn't seem like a lot. When you consider, however, that the basic computer has a video adapter, disk controller, and expanded memory capabilities built in, the two slots will allow for networking and anything else you might require.

Many options are available so that you can configure the computer to be just what you want. An internal 2400 baud modem ($599) works flawlessly. If you prefer, the computer will accommodate a second serial port ($149) instead of the modem. This configuration offers increased versatility and also might save you a few bucks if an internal modem is not a high priority. To round out the line of options, you have a choice of operating systems: MS-DOS ($120) or OS/2 ($325). A carrying case ($89) and numeric co-processor ($799) are also available.

While the system is not inexpensive, the basic computer is available at prices considerably below the list $5399. The purchase price includes a one year warranty. There are many features that make this top-of-the-line computer fair value. You really can use it for both a laptop and a desktop unit by adding a full-size color monitor and the keyboard of your choice. So many other laptops can double as desktop and portable units, but their display as a desktop simply is not good enough. The VGA display means that you can have real desktop quality by simply adding a color monitor.

Laptop computers continue to improve, and today's best units inevitably will be surpassed. For now, this is the unit to beat. There are many features that set this computer apart from the competition. Speed of battery recharge and the small size of the battery both add greatly to the appeal of this unit.

Special Features

Compaq has gone out of its way to design an energy efficient system. Through software you can determine the power-down time of internal components. After a specified period of non-use, the modem, hard disk, floppy drive, display, and central processor will each shut down in order to conserve power. They restart as soon as the function is accessed. If they all shut down, the computer can be brought back by touching the Stand By button. As the battery becomes low, the computer alerts you first by LED indicators and finally with beeps that it is time to save and recharge or connect to an external power supply.

The setup program included with the computer allows you to configure most of its features without having to be a highly sophisticated user. A simple menu gives options which you select with the cursor keys and save by keying "enter." You can set the time and date, instruct the system to turn on the modem at power-up, select video attributes, and configure the power saving options as you like.

If you expand the memory, you can configure the additional memory through the Expanded Memory Manager. It will allow you to use this memory for applications requiring the Lotus/Intel/Microsoft Expanded Memory Specification. In addition, you can set up disk caching, which greatly accelerates applications such as databases which need to access the hard disk often. There is also software for setting up a RAM disk.

Documentation

And finally, as we have come to expect from Compaq, the documentation is excellent. Each of the features of the included software is fully explained and illustrated by examples. While jumping into the world of MS-DOS computing for the first time is always a trying experience, the documentation with this unit is as simple and straightforward as could be expected. A system overview introduces the basics of the computer. Individual manuals for each of the optional devices provide the needed instructions. The Operations Guide has a pocket inside the front cover that contains a quick reference guide for when you are traveling with the unit. Also included is a Publications Reference which tells which manuals discuss each of the different topics. Compaq has made sure that getting the most out of the SLT/286 is as easy as possible. For those who require more technical information, a Technical Reference Guide is available ($149). ■

Many other laptops can double as desktop and portable units, but their display as a desktop simply is not good enough. The Compaq's VGA display means that you can have real desktop quality by simply adding a color monitor.

Resources:

Compaq SLT/286 Personal Computer
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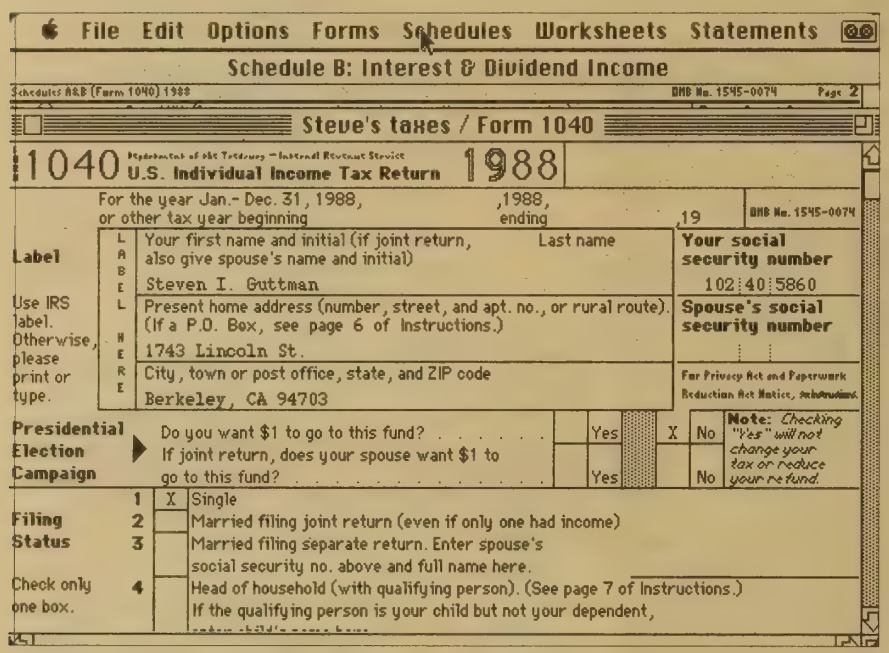
Tax Preparation Software For Mac And PC:

MacInTax, TurboTax, And TaxView

By Jennifer Farrell and Steve Guttman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If the qualifying person is your child but not your dependent,

MacInTax lets you fill out your tax forms onscreen and print the result on either an ImageWriter or a LaserWriter

"Tax Simplification"—our nomination for oxymoron of the year.

The tax reform act of 1986 was widely touted as tax simplification because it reduced the number of income groups to three. Big deal! What they neglected to mention was that other changes in the law make it fiendishly difficult for ordinary mortals to even *contemplate* doing their own taxes. If you can't file 1040A or 1040EZ (the abbreviated tax forms), prepare yourself for some serious trauma. The W4 (withholding) form alone is enough to make the SATs look like nursery school entrance exams. And believe us, that is the least of your worries.

The tax code, which started as a 16-page set of instructions in 1913, has grown to over 36,000 pages of ambiguous, obtuse, difficult-to-read regulations. If your return is complicated by any weird adjustments or sources of income, in many cases you're better off consulting a tax accountant/preparer. Trying to figure it out yourself can put you in a coma, or at the very least, lower your IQ by about 30 points. This kind of stuff puts a gleam in the eyes of the Arthur Andersons and Arthur Youngs of this world—the tax reform act of 1986 is generating more revenue for tax accountants than the GNP of many small countries.

For many of us, the time has come to admit failure and seek professional help to prepare our tax returns. But for those stalwart souls who refuse to concede defeat, you might wonder what your options are. Two favorites—marrying a tax accountant, or retiring to a Himalayan monastery—may lack practicality for some of you. But if those options aren't appealing, and if you don't have the rest of your life to prepare for tax season, you might want to take a more rational tack and purchase a tax preparation software package. We reviewed three software programs—*TurboTax* and *TaxView* for the PC, and the ubiquitous *MacInTax* for the Macintosh.

Who Needs It?

While all these packages are good software, you should understand what they are and are not useful for before buying one of them. Conceptually, these programs are a kind of cross between *Excel* and *HyperCard*. Their spreadsheet qualities allow them to keep track of your dollar entries, add and subtract appropriate quantities and keep a running total of your tax liability. Their "hyper" abilities link appropriate tax forms together, organize and provide easy movement between forms, and give you context-sensitive help.

In most instances, it is truly easier to deal with forms on screen than completely spread over the floor of your study. However, for many people, this is the only advantage of a tax preparation program. If you can use 1040A or 1040EZ, you probably will not be able to justify the expense of this software. The short forms really don't take much time to fill out. Similarly, even if you have to file the long-form 1040—if you have a good handle on all your deductions and your W-2 forms are all at hand, these programs may not offer you a significant advantage.

Tax preparation programs are really for people who want a way of getting at the forms quickly and easily, who have a pretty good idea of how the various tax entities work together, and who want to be able to make changes to their returns during preparation.

Furthermore, if you honestly don't understand how the tax code treats your particular income, credits, and deductions (and you have no interest in knowing), these programs may not be worthwhile. They don't teach the code, they just help you prepare your returns.

Tax preparation programs are really for people who want a way of getting at the forms quickly and easily, who have a pretty good idea of how the various tax entities work together, and who want to be able to make changes to their returns during preparation.

MacInTax

MacInTax is the *grande dame* of tax

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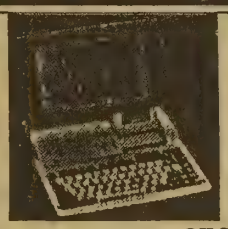

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the appropriate information to your tax forms. To add an asset and calculate the appropriate depreciation expense, *TurboTax* asks you a series of questions about the nature of the asset and type of depreciation you want to use. While you must still understand how each asset fits into the overall picture of your profitability (or lack thereof), this really helps eliminate the busywork.

Like many PC programs involving calculations, *TurboTax* tries to emulate *Lotus 1-2-3*, at least as far as function key assignments go—**F1** is help, **F2** is edit, **F9** is calculate. The user interface, while not necessarily intuitive, is commonsensical and well designed. We particularly like the status line which identifies the kind of entry that the cursor is positioned on. It tells you, for example, whether the program is looking for text or value data, whether these values are protected, and whether the entry can be expanded. An expanded entry links to a pop-up window and, like *MacInTax's* itemizations, attaches additional information to a line.

As you might guess, the backslash ("\") key accesses the main menu, which contains a plethora of options, including a pop-up calculator and notepad. Some of the program's highlights are:

The Form Selection Menu. The **F6** key pops up a window with a list of all the IRS forms and schedules (forms which are partially completed are highlighted). The form of interest can be accessed by picking it from the menu.

The Quick Link Forms Finder. This option pops up two windows, one displaying a scrolling list of 500 topics, and the other which shows the forms associated with the highlighted topic. You can jump to any given form by highlighting its name and hitting ENTER.

The Quick Link Topics Finder. This is the converse of the Forms Finder, displaying a list of forms in one window, and the topics that are associated with the highlighted form in another.

The Tax Window. This beauty displays the status of your return at any point during preparation, showing your income, tax liability, and refund.

Data Examiner. This is an auditing feature which scans your return and provides messages on any missing fields and values.

Tax Planning. *TurboTax* also has a "plan mode" to help you anticipate your 1989 tax liability and adjust your strategy accordingly. When in "plan mode" *TurboTax* uses the 1989 tax tables.

TurboTax can be run in either graphics or text mode, where the graphics mode screens emulate the look of the actual IRS tax forms. While the screen doesn't look as slick as *MacInTax*'s, it's still realistic enough to strike fear into your heart.

While you can fill out *TurboTax*'s forms in any order, you're probably best off starting with 1040, and branching to the supporting schedules as their entry lines are encountered. You can jump to a supporting form easily by hitting the **F5** hot-key when the cursor is positioned on the associated line on 1040. You can also access the IRS's instructions by choosing **instruct** from the utility menu (it would be nice if there were a hot-key for this).

One of our few complaints about the program—and we probably shouldn't even call this a complaint—is that it almost has *too many* features. You get the feeling that ChipSoft compiled a list of suggested features from their users and then added *every single one* of them to the program. The options and capabilities of the program are almost overwhelming. However, every feature serves a useful purpose, and most are well designed and implemented. Our only warning is that you should make sure you don't spend more time playing with the program than you would preparing your taxes by hand.

TaxView

Softview's *TaxView* is essentially a port of the company's Macintosh product to the Microsoft *Windows* operating environment. *TaxView* is designed to be used on an AT-class machine or faster—the program comes on five 1.2 Mb floppies and, as is traditional with *Windows* software, can be installed either as a standalone program or as a *Windows* application. As such, it shares the benefits and pitfalls of *Windows*—outstanding graphics, but a long, involved installation procedure (especially for the standalone version).

The workings of the programs are essentially identical to *MacInTax*, with function-key assignments substituted for Macintosh option-key combinations. One really nice addition is the inclusion of downloadable fonts for the HP LaserJet—for printing the tax forms. And for your nighttime reading pleasure, both *TaxView* and *MacInTax* come with a copy of Arthur Young's *Federal Tax Highlights.*

And So It Goes

Once again, we must emphasize that these programs are not a substitute for an understanding of the tax laws. If you needed a tax accountant before you bought the program, chances are that you will still need one afterwards. However, a tax preparation program can save you hours of wallowing through instructions and searching for mislaid forms. In addition, they are very good vehicles for consolidating your tax information, and helping to understand where your tax liabilities are coming from. For their modest prices, these programs will be a worthwhile investment for many people. They will all take you from Schedule A to Worksheet Z in relative style.

TurboTax's awesome features definitely set it above *TaxView* and *MacInTax* in terms of raw abilities. It will probably be the choice of those who like doing a lot of planning and scenario analyses. But features aren't the only issue. Another consideration is ergonomics. Choose a program that has a "look and feel" that you are comfortable with. If you're happy in the character-based world of the PC, and automatically look for the "\" key on your computer, *TurboTax* will definitely show you a good time. If you think MS *Windows* is "The Soul of the New Machines," and you own a '286 or better, you may prefer *TaxView*. And devoted Macintosh users won't go wrong with *MacInTax*. Its well designed features and consistent interface make it a good choice for Apple enthusiasts. ■

A tax preparation program can save you hours of wallowing through instructions and searching for mislaid forms. In addition, they are very good vehicles for consolidating your tax information, and helping to understand where your tax liabilities are coming from.

RESOURCES

TurboTax by ChipSoft, Inc.
5045 Shoreham Place
San Diego, CA 92122
(619)453-8722
Retail Price - $75.00

MacInTax and *Taxview* by SoftView, Inc.
4820 Adohr Lane, Suite F
Camarillo, CA 93010
(805)388-2626
Retail Price $119.00 (*MacInTax*) and $119.00 (*TaxView*)

Jennifer Farrell is a tax associate at Price Waterhouse in San Francisco. Steve Guttman is a computer and marketing consultant in Berkeley.

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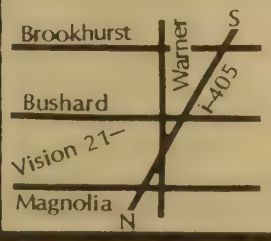


VISION 21

S·Y·S·T·E·M·S

preparation software for the Macintosh; it basically owns the Mac tax software market. It doesn't have a lot of frills, but what it does it does simply, elegantly and easily. *MacInTax* faithfully reproduces the federal tax forms on screen (in the glorious Geneva font), provides links between forms, and organizes the tax preparation process.

MacInTax deals with four types of tax documents—forms, schedules, worksheets, and statements. The "Forms" and "Schedules" menus give access to standard IRS forms and schedules; "Worksheets" are IRS forms which contain supporting figures for a form or schedule; and "Statements" are supplementary supporting forms, provided by *MacInTax*, which are attached to your return.

In the Macintosh style, *MacInTax* lets you keep any number of different forms open on screen. This makes it easy to switch from form to form. Incomplete forms are listed in an outline font on the menus, and names of completed forms are underlined. Preparing your taxes is straightforward: simply complete the tax forms on-screen as you would on paper. *MacInTax* automatically fills in values which would be entered on multiple lines, and makes calculations and comparisons where appropriate.

One nice feature is the ability to mark uncompleted lines or estimated values by appending a "**?**" or "**e**" to your entries. This lets you enter preliminary numbers without running the risk of accidentally forgetting that those numbers were estimates. You can easily find question-marked or estimated items within a form by hitting **shift-option**.

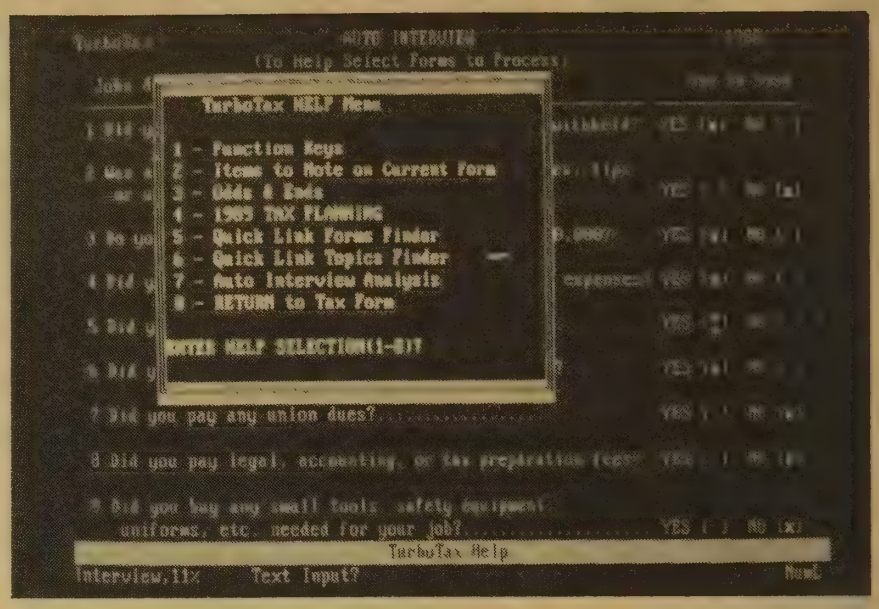
Another nifty feature is the ability to create an "itemization" of an entry. Say, for example, you have more charitable contributions than can be listed on Schedule A, line 14. By double-clicking in the value field, you can open up a window in which more deductions may be entered. *MacInTax* sums these deductions and inserts the total at the appropriate location in the form.

MacInTax always calculates in the background, so you don't have to hit a special calculation key to get numbers to flow through the forms. It also provides the IRS's tax instructions online, conveniently accessed by double-clicking on the text portion of a line. Both ImageWriter and LaserWriter output forms are acceptable to the IRS.

TurboTax

TurboTax is a feature-filled program from ChipSoft of San Diego. A winner of accolades from both *PC Magazine* and *PC World*, it's been a hot mover at a lot of local software outlets. We know several people who swear by it.

One of the nicest facets of this program is the thought ChipSoft put into preparing you to fill out your tax forms. For example, the program contains an "auto-interview" feature, consisting of 53 questions which help identify the forms you'll need to complete your return. The program keeps this list of forms available for easy access in a pop-up window. *TurboTax* also has a Depreciation and Amortization Worksheet to catalog your depreciable assets and transfer


TurboTax HELP Menu
1 - Function Keys
2 - Items to Note on Current Form
3 - Odds & Ends
4 - 1989 TAX PLANNING
5 - Quick Link Forms Finder
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7 - Auto Interview Analysis
8 - RETURN to Tax Form
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Things to Watch Out For While Preparing Your Tax Return

A friend of ours who prepared his own 1987 tax return told us he was a little disillusioned when he found a notice in his mail box from the IRS claiming he owed more tax because he was subject to AMT. After paying penalties and interest, he responded: "What the hell is AMT?"

AMT: The Alternative Minimum Tax is a tax in addition to regular income tax which Congress created to ensure that taxpayers, including corporations—those with high incomes who were claiming lots of legitimate deductions—paid some minimum amount of tax. To be safe all taxpayers except those filing 1040EZ or 1040A should fill out form 6251, and especially those people who have the following types of income and deductions:

Income

1)Incentive stock options, exercised during 1988;
2)Interest on post-August 7, 1986 private activity bonds;

Schedule A deductions

1)Medical expenses in excess of 7.5% of AGI (Adjusted Gross Income);
2)Miscellaneous itemized expenses in excess of 2% of AGI;
3)Charitable Contributions of appreciated property;
4)Consumer or personal interest;

Other deductions

5)Schedule C or E accelerated depreciation expense; and,
6)Schedule E passive activity losses which were allowed.

After completing the form taxpayers should read the instructions for 6251 under the subheading "Who Must File" to find out if they need to include this form with their 1040.

Capital Gains and Losses: Taxpayers who had capital losses in excess of $3000 in 1987 should include the excess in their 1988 tax return. Congress says we can offset any capital gains earned this year with losses we were not allowed to use in prior years.

Interest Deductions: Altogether there are six different types of interest. Some are fully deductible, some are partially deductible, and some are nondeductible. For most people home mortgage interest is still fully deductible. Consumer interest, i.e., interest on your credit cards and your car loans is only 40% deductible in 1988. And interest on a loan for which the proceeds were used to purchase tax exempt municipal bonds is nondeductible.

Home mortgage interest on two residences incurred to acquire the residences or make substantial improvements is fully deductible on Schedule A unless total acquisition debt exceeds $1 million (for mortgages taken out after October 13, 1987). Points paid on refinancing must be spread out over the life of the loan. Taxpayers with more than two places of residence each year must designate a principal residence and secondary residence. Mortgage interest on any other home is not deductible on Schedule A, but depending on how the residence is used it may be deductible on Schedule E.

Passive Activities: Just like capital losses, passive losses are limited; the unallowed passive loss can be carried forward to offset passive income in the future. But unlike capital losses which are limited to $3000, passive losses from investments acquired prior to October 22, 1986 are limited to 40% of their total for 1988. Those acquired after October 22, 1986 are limited to passive income.

Home Office: To deduct expenses related to the business use of your home the expenses must be attributable to a portion of the home used exclusively and on a regular basis for the conduct of your trade or business. A deduction is not allowed for space which is used for business and personal reasons, except in a few cases. Anyone trying to offset their business income with a portion of their home mortgage should consult their tax accountant or another source of technical assistance before filing their tax return.

Those preparing their own tax return know it can be an arduous task. Tax preparation software packages take the drudgery out of the process. Nevertheless, it is important to remember that the final product, the tax return, will only be complete and accurate if the information input into the package is complete and accurate. This short list of common tax issues should help point those people willing to take a shot at it in the right direction.
—Jennifer Farrell

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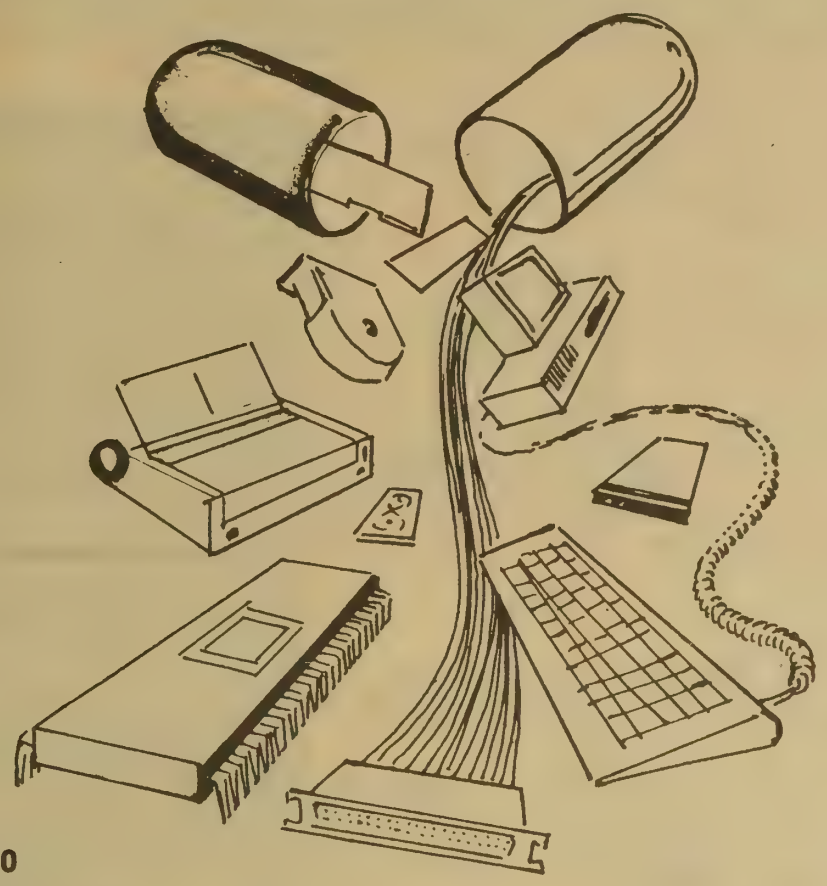

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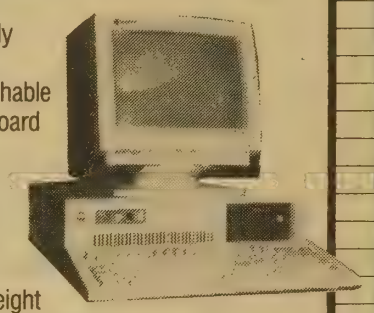

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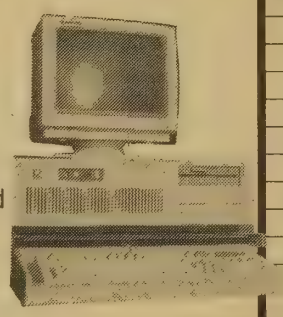

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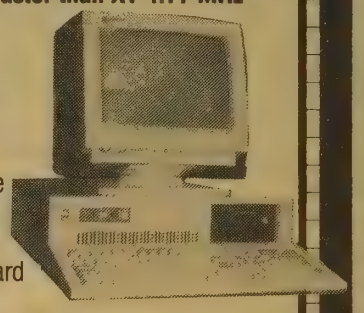

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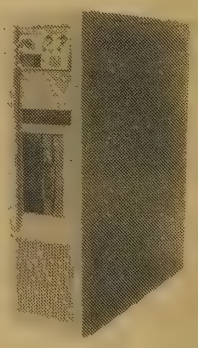

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MAC @ WORK

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The Macintosh SE/30

First Impressions

By Mary Eisenhart

For some reason, the Macintosh SE has never particularly charmed me. Given the choice between the bulky but expandable (to say nothing of colorful) Mac II and the smaller, less expandable SE, I went for the Big Mac. And I continue to be very happy with it.

Perhaps because I found the II such an easy choice, I wasn't overwhelmed when the SE/30 was announced. Sure, that math coprocessor gave it some pretty impressive speed in generating graphics and calculating spreadsheets. Sure, the 68030 processor was a whole lot faster than the original SE's 68000. Still, after all, it only had one slot. Still, it was determinedly monochromatic. And of its three available configurations (with 1 Mb of RAM, $4369 list; with a 40 Mb internal hard drive and 1 Mb of RAM, $4869; with an 80 Mb hard drive and 4 Mb of RAM, $6569), none was exactly cheap, in spite of some enthusiastic price-cutting by local dealers.

In short, I entirely failed to see why my technoid friends at Apple were running around chortling to themselves every time this machine was mentioned, as if Christmas was just around the corner.

The mystery was solved when the review unit arrived. Naturally, Apple in its wisdom sent out the top-of-the-line configuration (80 Mb disk, 4 Mb RAM). It took me about half an hour to develop an attachment to this machine rivaling that of an NRA

The Mac SE/30 offers speed, power, and IBM file compatibility in a compact desktop machine.

member for his gun.

Aside from the fact that it runs MultiFinder by virtue of having its four megabytes of RAM, which is a non-trivial productivity enhancer over the one-meg Plus that used to live here, the SE/30 is so fast that performing the normal mundane tasks of the day becomes, well, *fun*.

Physical Reality

The SE/30 occupies the same space as the Plus, a fact which is going to make it attractive to those who need power but don't have huge desktops to dedicate to their machine. Like all new Macs since the SE, it can use either the Apple Standard or Apple Extended keyboard, both of which take some getting used to if you're more familiar with the 128/512/Plus variant; the keyboard feels mushy to me, but its ergonomic design really does seem to make it easier to type quickly.

While it's positioned as part of Apple's compact and (relatively) portable product line, the SE/30 with the internal hard disk is noticeably heavier than the Plus, which was no lightweight itself if you had to carry it very far. Moving it around an office wouldn't be much of a problem; taking it along on a business trip would get pretty harrowing. It is not a substitute for a laptop computer.

The SE/30's single slot, called the 030 Direct Slot, offers expansion capabilities, including video, color, and gray-scale external monitors, sound and networking, and a host of third-party products have been announced for particular functions. It also includes an Apple custom sound chip which provides four-voice stereo sound for professional music applications.

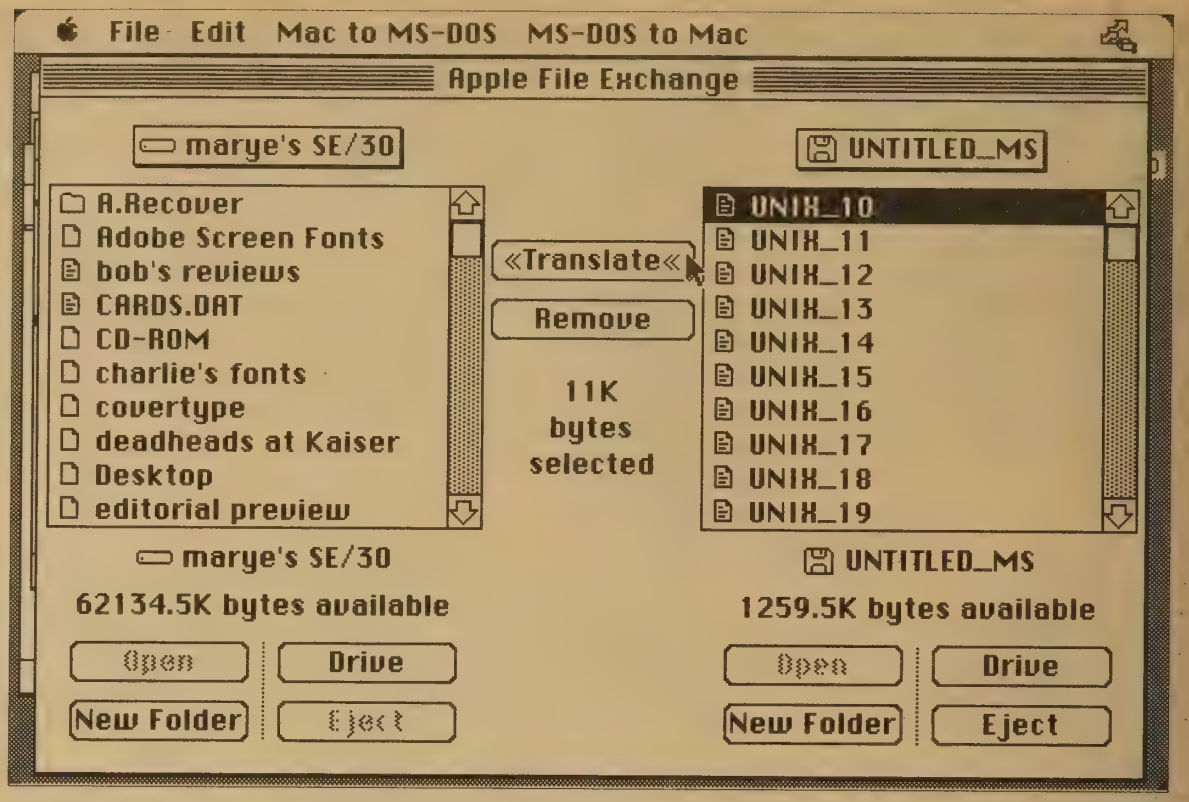
The SE/30 runs Macintosh system software version 6.0.3, which has special features to take advantage of the hardware. You may have to boot from the System diskette and install the System on the internal hard disk before you can use it; this was a straightforward and well-documented procedure.

One of the most attractive features of the SE/30 is the FDHD drive, which reads and writes not only 400 K, 800 K and 1.4 Mb Macintosh-formatted disks, but also 720 K or 1.4 Mb MS-DOS or OS/2 diskettes, as well as the Apple II ProDOS format.

Working With The SE/30

Especially if you're accustomed to a less powerful Mac, you'll probably be a little unprepared for this machine's speed. Files get copied almost before you can blink. Scrolling is instantaneous, even in memory-hungry programs like *FullWrite Professional*, even under MultiFinder with many windows open. While the SE/30 is an obvious choice for graphics and number-crunching, it's also an all-round productivity enhancer, essentially eliminating all those little delays that add up to hours of wasted time.

While I've encountered the occasional anomaly with System 6.0.3 (which only 68030-based Macs need or want), none was particularly significant—mostly older versions of applications which balked occasionally. The most annoying (and not consistently repeatable) problem is that occasionally a floppy disk, when dragged to the trash, keeps its little grayed-out icon on the desktop; the result is that the disk stays in memory and the Mac tends to ask for it back at awkward moments. If the disk has made its way down the sneakernet, there's nothing to do but reboot, which can get annoying (on the other hand, the SE/30 restarts with lightning speed, so you don't lose *that* much time). As we went to press, people at Apple, Symantec (we suspect the Shield Init in Guardian may have something to do with this), and the WELL were scratching their heads over this one, their diagnostic difficulties augmented by the complete disappearance of the problem...



The SE/30 includes the FDHD drive, which reads and writes DOS, OS/2, and ProDOS formatted disks as well as Mac formats. Using the Apple File Exchange software translators, it's easy to translate files from different environments.

The FDHD And Apple File Exchange

In these connective times, it's a great convenience that Apple has incorporated this multi-format drive into its new Macs. Used in conjunction with Apple File Exchange software (included), the FDHD eliminates much of the hassle of moving files from the IBM universe to the Mac. Of course, it will be better still when the IBM universe casts off its 5 1/4" floppies and gets with the 3 1/2" program.

The Apple File Exchange software included with the SE/30 translates text-to-text and DCA-RFT-to-*MacWrite* (and back). Other translators (e.g., *WordStar* to *MacWrite*) are available from authorized Apple dealers. Using an interface similar to the Font-DA mover, you select the file to be translated, the desired translator, and the destination volume. After the document's been translated, it will still look like an unnervingly blank document from the desktop, but *MacWrite* will open it happily and save it as a *MacWrite* file. (Another approach would be to look at the alien textfile from within ResEdit, define its type as TEXT and its creator as MACA (*MacWrite*); you may have to strip out some funny-looking linefeeds, but this should yield a text file you can work with.)

If the ability to read DOS or OS/2 files is one of your chief requirements, check with your Apple dealer to see whether the translators you need exist, and with the vendor of the software you'll be using to see what other formats it can import/export. Assuming the availability of the translation software you need, the FDHD is a real time-saver.

If you need an indefatigable workhorse computer that doesn't take up much desk space, and if you don't expect to need more than one expansion slot, the SE/30 is a great choice.

Conclusions And Unanswered Questions

If you need an indefatigable workhorse computer that doesn't take up much desk space, and if you don't expect to need more than one expansion slot, the SE/30 is a great choice. Its higher-end configurations rival some of the Mac II line in price, but its superior performance and compact size make it a better choice for many business uses.

Still an open question is how the SE/30 will relate to A/UX. At press time, we had not received A/UX 1.1, which supports the 68030 processor as 1.0 did not. The SE/30 does not have the II/IIx's Paged Memory Management Unit (PMMU) chip, and its documentation is silent on the subject of UNIX. Since we've heard a wide spectrum of expert opinion on the probable effects of trying to run A/UX on the SE/30, we'll try it when the update arrives, and report back.

Similarly, we have not yet been able to test the SE/30's performance with various cards and peripherals, and will be discussing the results of different hardware combinations in future issues.

For the moment, it's obvious that the SE/30 is a powerful machine which may well become the mainstay of Apple's hardware line. It's a real boon to productivity, and, in classic Mac fashion, it is also Big Fun. ■

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HYPERCARD

BY BIRRELL WALSH

Consulting The Oracle

Remember the moment in *Close Encounters Of The Third Kind* when the Mother Ship rose over the mountain? Well, that's *Oracle*—the mother ship of relational databases. On short acquaintance I can tell you that it is very big, it is very powerful, and it will take you far.

Oracle is a database system that has been realized on a large number of platforms, as well as the name of the company which develops it. The software runs on mainframes and minis, and can be found throughout the corporate world. The company unabashedly intends to dominate the market.

Oracle was the first database company to implement SQL, the "structured query language" that is becoming the standard language of the database world. SQL allows you to use the same query on your Macintosh and on an IBM mainframe. SQL is largely non-procedural, which means that you say what data you want, and ignore the question of how the machine will get it for you.

SQL's implementations vary from machine to machine, but Oracle has undertaken to make them identical across its various products. A corporation can thus buy *Oracle* to run on a single Mac, on mainframes, or on a network of mixed machines.

Oracle may not seem to be a Macintosh product. It does not have the traditional Mac interface, with clouds of pull-down menus. Nor does it settle for the text-only interface which it might use on other, more limited machines. *Oracle For Macintosh* has taken *HyperCard* as its interface. Thus (in the Macintosh platform at least) the completely text-based SQL language can drive a graphic interface.

Without Reservations

In the documentation that comes with *Oracle*, you receive an application which simulates a national hotel reservation system. The Four Winds Hotel chain has hotels in San Francisco and a number of other cities. *Oracle* lets you examine the current reservations and occupancy in any of the hotels. You can do it with SQL, or you can do it with the graphic *HyperCard* interface which is supplied as an example.

If you prefer to use the SQL language directly, you can write a query in the "SQL*Lab" section of *Oracle*:

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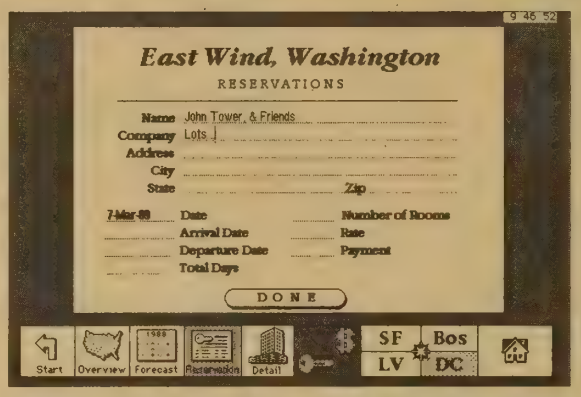
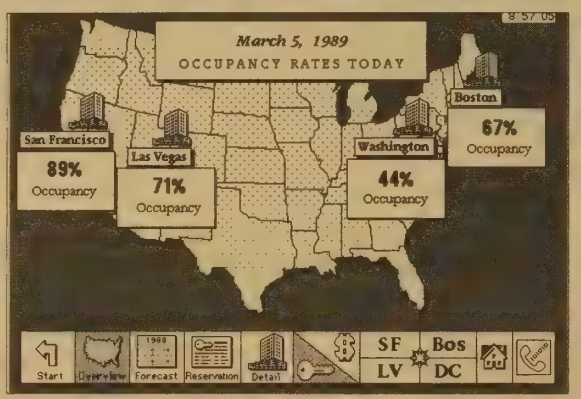
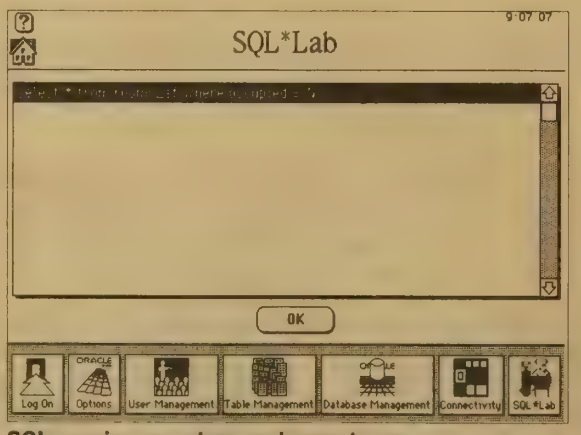




It looks like HyperCard, but behind the familiar face is the full power of the Oracle relational database.



SQL queries are clear and easy to use.

Oracle For Macintosh has taken HyperCard as its interface. Thus (in the Macintosh platform at least) the completely text-based SQL language can drive a graphic interface.

SELECT * FROM ROOMS_SF WHERE OCCUPIED = "N"

SQL queries are clear. If you ever used DOS, you will recognize the asterisk as a conventional way of saying "All". With that substitution, this query is clear to any reader. You want all the unoccupied rooms in the SF_ROOMS database. Because SQL is non-procedural, you do not need to bother yourself about how (or where) that database is stored. It may be stored on your Mac, down the hall on a mainframe, or at the other end of a long-distance telephone link. *Oracle* is equally comfortable with any of those possibilities. And *Oracle* will handle complicated joins of multiple tables of data because SQL was designed to work with large relational systems.

You can use SQL to change information and administer systems as well as to examine data. It has levels of user permission, and has the possibility of single-administrator or multi-headed structures. You can create an O*racle* network in which you have private spaces and public spaces in any combination you desire.

If you prefer that users use the graphic interface that comes with the Four Winds *HyperCard* example, they need never know SQL. They can find out how things are going in San Francisco by pushing a button. *Oracle* will get all the information and distill it for display on one card. It is possible to query all the relevant databases and get a national occupancy report on a map of the United States. To users this seems like a standard *HyperCard* application. In fact, all the power of the SQL database is behind this display. You can also use *HyperCard* to enter data into the system. The reservation card on the Mac can look just like that which a customer might fill out on arrival.

Making due allowance for my prejudice in favor

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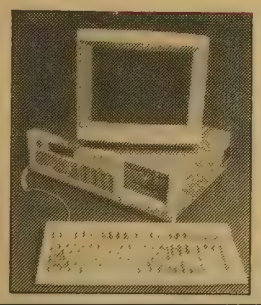

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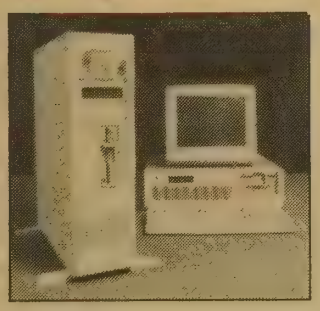

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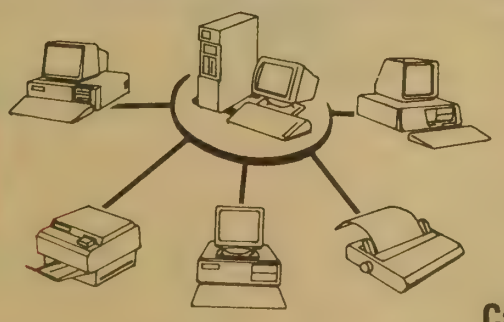

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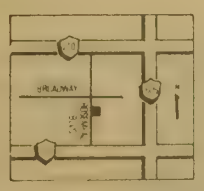

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of *HyperCard*, I find this a very clever solution to inter-platform problems. On the one hand, the application should be compatible with text-only Oracle systems on other machines. But we want to use the Mac's graphics. The Oracle Corporation managed to glue the graphic Macintosh world to the text-based SQL world by creating a hybrid it calls Hyper*SQL.

Hyper*SQL allows *HyperCard* to send SQL messages to the *Oracle* kernel. This works whether the kernel is local—running in your Mac—or across the country and resident in a mainframe. It also allows *HyperCard* to receive the answers and to distribute the data into cards or fields as you see fit. To *HyperCard*, the SQL of *Oracle* is a giant XCMD which gives and takes data mysteriously. To *Oracle*, *HyperCard* looks like any other user of SQL.

Room At The Top

The bad news (there always is, isn't there?) is that *Oracle* does not provide you with a finished application. *Oracle* comes as a tool kit with which you can design an application. There are many example scripts built into the stacks. *Oracle* also includes a C precompiler which will allow you to write C programs with embedded SQL commands. You can even design programs which will execute SQL commands entered at runtime. *Oracle* also wants about two megabytes of RAM just to move around. If you don't want to design your own database, or want a smaller product, it is not for you.

On the other hand, *Oracle* could be heaven for a person working for a large corporation. Because *Oracle* will work on a large variety of machines, it is a chance to get Macintoshes (and *HyperCard*) into environments that have previously been hostile to them. You can build a point-of-sale information and order system that uses the Macintosh to show merchandise and take orders. It can use all the facilities of *HyperCard* to charm the customer. (Your application might even win the Mac II Oracle is offering for the best *Oracle* stackware. Deadline is May 31, 1989.) When you begin, you might feed this information to a small network of Macintoshes. As you succeed, you can bring in a mini or a mainframe, and still use *Oracle*. Since SQL is gaining acceptace so rapidly, you can be sure that the programs you write for the *Oracle* system will be easily converted to many other situations, and even other products.

I doubt you will have to convert, though; Oracle really is the mother-ship.

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Speaking of Hotels...

...And changing the subject entirely: I got a copy of *Deja Vu II: Lost in Las Vegas*, and found myself waking up in a cheap hotel with a hangover and an angry mob after me. I couldn't beat the game after days of trying. Not even Suvid Tubtimcharoon, the neighborhood expert on adventure games, has cracked this cruel tale of gangster vengeance. If you love detective fiction, give this one a try. Let me know how to communicate with that deaf cabby in Chicago, will you?

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If you prefer that users use the graphic interface that comes with the Four Winds HyperCard example, they need never know SQL. They can find out how things are going in San Francisco by pushing a button. Oracle will get all the information and distill it for display on one card.

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BY SUZANNA MUSICK

Computer Consultants And Your Business

Never overlook the personal qualities and organizational talents of the consultant. Depending upon the scope of your project, this person could become a temporary member of your staff, and should be able to get along well with people, possess good organization skills, and be able to motivate others.

Copyright © 1989 by Suzanna Musick. All rights reserved. *Suzanna Musick is a Manager in the Computer Consulting Department of Hemming Morse Inc., CPAs. Her experience encompasses a wide range of industries such as distribution, retail, construction, real estate, financial, and professional services.*

In this complex, fast-moving world, keeping up with the latest computer hardware or new software program is a full-time job.

For this reason, when you're ready to automate your business, when you need to assess the efficiency and suitability of your current systems, or when you need to expand and alter those systems, you should consider calling in a computer consultant. By asking the right questions and by helping you define your needs clearly, the consultant can help you make the right choice.

Where Do You Find A Computer Consultant?

The best way to locate a computer consultant is to ask for referrals from business associates, professional and trade organizations, computer dealers, and software vendors.

If they have been successful in working with a consultant, your business associates will probably be happy to recommend him or her to you. Those who were not so lucky can also give you valuable advice about what (and who) to avoid.

If you can't find a consultant through a personal referral, try local computer users' groups and your own professional or trade association.

Computer dealers are another alternative. Although dealers are usually the source for computer hardware and software, they do not have the expertise (or the time) to provide consulting services to their customers. As a result, many of them refer business to reputable local consultants who can be relied upon to provide initial training, equipment installation and testing, and ongoing technical support.

Software manufacturers who offer advanced training to software dealers and consultants may also be able to supply you with the names of local consultants.

How Do You Evaluate A Computer Consultant?

A meeting or interview is an absolute prerequisite. If, in your first meeting, the only thing you hear is computerese, we strongly advise you to consider another candidate.

Ask the consultant how they plan to structure the project. Will they write an agreement letter breaking the work to be done into measurable phases, and provide a cost estimate for each phase? Do they

Software manufacturers who offer advanced training may also be able to supply you with the names of local consultants.

indicate how payments are to be made and how project overruns will be handled? Do they supply a project timetable? Finally, will they provide periodic reports on the progress of the job?

Does the consultant make a profit on the sale of recommended hardware and software?

Does the consultant belong to professional organizations? Where, when and how did they receive their training, and what are they doing to stay abreast of the market? If they work alone, what happens to you if you have a problem and they aren't available?

How well can the consultant apply his or her expertise to your particular problem? The consultant should not only understand computers but be able to translate and apply that knowledge to your particular business. They should also have some specialized knowledge of the category of software they will be installing for you.

Never overlook the personal qualities and organizational talents of the consultant. Depending upon the scope of your project, this person could become a temporary member of your staff, and should be able to get along well with people, possess good organization skills, and be able to motivate others.

Finally, as with anyone else you might hire, always check references. What do previous clients say about a consultant's work? Did the consultant do the promised work on time and within budget?

If you follow these general guidelines, you will maximize your chances of selecting a consultant who does a thorough job, and make the experience of automation both pleasant and successful. ■

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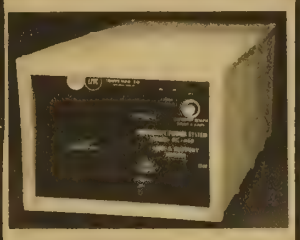

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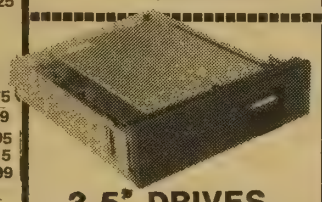

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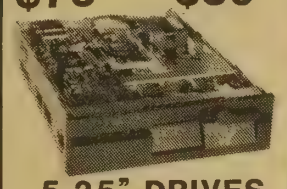

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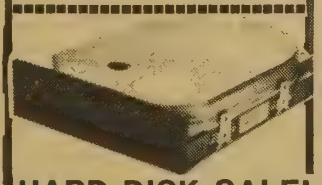

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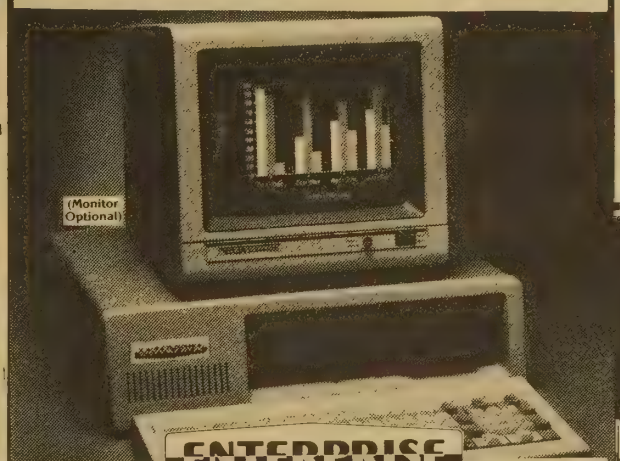

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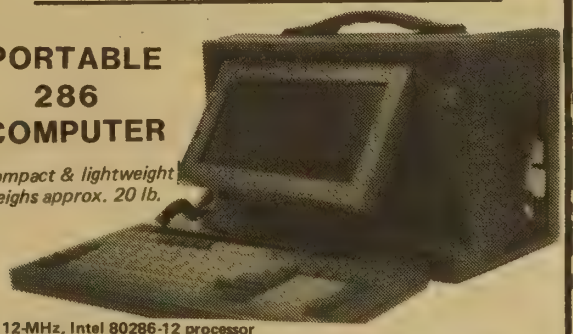

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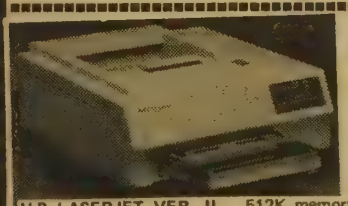

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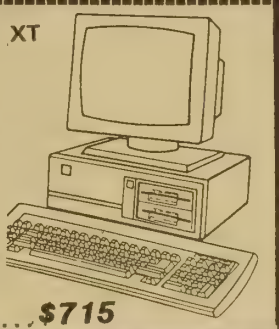

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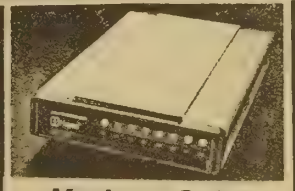

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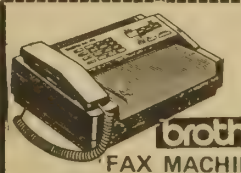

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BY MATTHEW LEEDS

Springtime Follies

Spring has arrived in the Bay Area, and with it comes the disturbing influences of pollen, hormones, and warm weather, tempting even the most stable of us to fall prey to the foibles of fancy. This certainly seems to be the case regarding a series of press releases I recently received from Useless Technologies regarding their entry into the Amiga market.

Their first product, the 3.5" disk notcher, is touted as a means to double the data storage capacity of an Amiga floppy disk. According to Useless Technologies president, John Dough, "By cutting a small notch in the side of the disk, you can flip the disk over, insert it in your disk drive, and write data to the backside of the disk. Developed originally for the Commodore 64, this inexpensive accessory can save you hundreds of dollars on diskette purchases."

A second press release explains their first software product, *FlickerStop*. "We noticed that a great number of software programs on the Amiga made use of the interlaced mode. This caused a very annoying flicker on the screen. We examined several other companies' solutions to this problem, and concluded that they were either too expensive to clone, or that they were already selling too close to their cost of goods for us to make a profit by undercutting their prices with a similar product. Our software engineers came up with a solution: *FlickerStop*. This is a small program that you run in your startup-sequence. It intercepts any attempts by other applications to enter the interlaced display mode, and nullifies them. This eliminates all flicker on the Amiga. *FlickerStop* only uses 400K of chip RAM, and cannot miss another application's attempt to run in interlaced mode as it BusyWaits while checking for this type of call."

Other products from Useless Tech include a PCjr emulator and the CerealBox, an interface adapter that connects to the parallel, serial, and floppy disk ports of an Amiga and lets you use Commodore 64 peripherals. John Dough explains, "We did a market survey and found that there were a large number of Amiga owners who wanted to use their C64 peripherals on their Amiga. Although we were never able to understand why, our marketing department decided that this was far too large a potential market for us to ignore. We developed the CerealBox to meet the perceived needs of this disposable income group. The CerealBox allows the user to connect a Commodore 1541 disk drive to an Amiga, bringing back the coffee break while loading an application. It also lets you use the model 1600 modem, and the 1525 printer. Why anyone would want to use a 300 baud, non-autodial modem was beyond us, but if there are people out there with money, well, I'm sure you understand."

All of the products announced by Useless Technologies will ship within two weeks of April 1st, or Real Soon Now.

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Deluxe Paint III On The Horizon

On a more down-to-earth note, I've received from Electronic Arts a pre-release version of *Deluxe Paint III*. It is a final version, minus the fancy disk labels and packaging. I've just started using it, and will write a more in-depth report in the near future.

A couple of quick impressions: it has gotten much bigger, from around 180K to 288K; you'll need a megabyte of RAM to get any useful work done. Its got the best system for handling fonts I've seen for any application on the Amiga so far—you can set a path to any font directory at any time, and preview the font in a window in the font requester. It now can create animations, and comes with a very nice ANIM player. (A side note—it seems that every other company that supports ANIM's does not support Aegis's use of two extra frames at the loop point in an animation. This causes an animation created with *VideoScape* but played with their players to "jump"at the loop point. This has got to change.)

Amiga Plus Debuts

A new Amiga-specific magazine has hit the stands: *Amiga Plus*. Produced by Antic Publishing, it has been positioned as a competitor to *AmigaWorld*. The first issue looks good, with articles from Bay Area authors Lion Kuntz, Richard Repas, Michael Lehman, and Jim Kent (plus yours truly). The magazine is available in two versions, with or without a supplementary disk. Included on this issue's disk is *Kamikaze Chess*, by Jim Kent. This is a twist on the standard game of chess in that you win by losing all of your pieces first. It takes a real change of thinking to play well, and can ruin your regular chess game for ever.

Distant Armies

Although I don't cover games on a regular basis here, the timing of my receipt of *Distant Armies* by Eagle Tree Software (producers of *Butcher*) makes for a perfect tie-in. If *Kamikaze Chess* sounds intriguing to you, consider *Distant Armies*. This is a survey of ten antecedents to modern chess, including Chaturanga, a sixth century Indian version, and Byzantine Chess, played on a circular board. *Distant Armies* provides all the standard computer chess features—saving games, customizing screen colors, setting the level of difficulty, two- and three-dimensional views, preview of all legal moves, online history, rules, and help for each version, and the option of playing against the computer or another opponent. A most enjoyable and worthwhile look at the history of chess.

I've started a new job, working for a local software company. I'll be making my usual disclaimer, notice of potential biases and that sort of thing next month. What I do want to mention now is that this new job has me using Macs and IBM clones (I'll refer to them as DOS machines) on a regular basis. I intend to compare and contrast both operating systems and applications as they relate to existing products on the Amiga, and as their features and functions are relevant to improvements that could be made to the Amiga and its family of third party hardware and software.

No, I don't intend to switch to another machine at home, but since I will be spending most of my time at work (what, you thought I did this column for a living?) writing on a Mac, I feel that I will be able to note some of the important differences, pro and con. There is room for much improvement in the Amiga, and you may be surprised by how many developers are looking at the Mac as a source of ideas, including the software engineers inside Commodore. ■

Resources

Amiga Plus Magazine
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San Francisco, CA 94107

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PO 164
Hopewell, VA 23860
(804)452-0623

Matthew Leeds has been involved in the high tech field since he blew up his bedroom playing with a children's chemistry kit. He has been using Commodore computers since 1982 and has a strong interest in photography, video, graphics and related fields.

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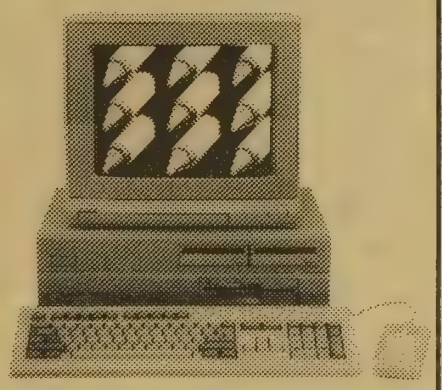

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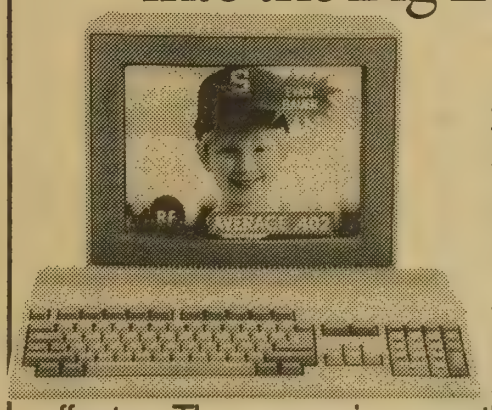

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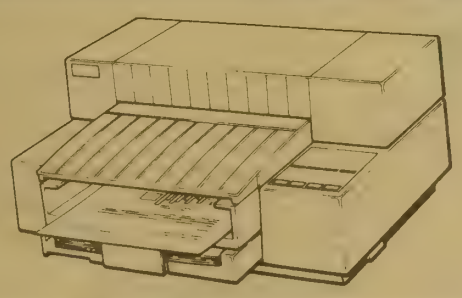

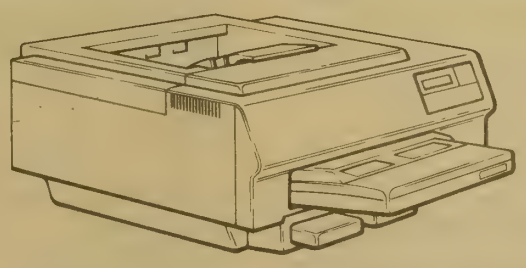

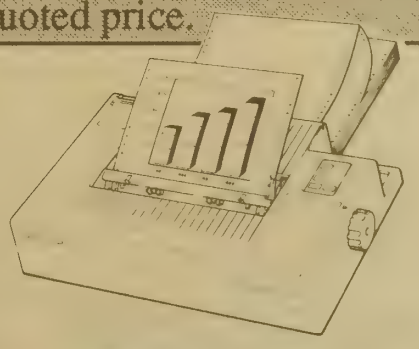

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WORLD OF EAMON (240) Classic role-playing fantasy game.
TRIVIA (234) Trivia game, 1500 questions, 4 categories, game clock, & options.
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BY DAVID HAWKINS

Atari And The Federated Debacle

More Info Resources

The *Wall Street Journal* reports that Atari Corporation lost $97 million in the last quarter of 1988, including over $100 million from writeoffs and reserves charged to the Federated Group subsidiary.

Atari would have had an operating profit of $9.3 million if it hadn't been for the Federated losses. This still would have been down from $21 million, with the drop being attributed to high RAM chip prices.

Evidently Atari will spin off the Federated Group, which will prevent future losses. There is also a lawsuit in process against the former owners/officers of Federated.

The Lesson Being...

One of my favorite quotes is, "All I learned from experience is that it didn't teach me anything." (Source anonymous). It will be interesting to see what Atari has learned from this excursion into the retail world.

Another Note

The *Wall Street Journal* article also quoted an Atari spokesman as saying "that a number of new items designed to complement the existing ST and MS-DOS product lines will be announced this year." Also, RAM chip prices are dropping.

Back To Information

Last month I talked about some of the ways to get more information about using your Atari. (Things like: talk to your dealer, visit user groups, log on to conferencing systems, etc.)

Another way to learn more is to read magazines. But often magazines are hard to find. Some dealers don't carry magazines because people come in and look at products and get advice and then order what they're interested in from the ads in the magazine. Personally I would suggest that if you use the services of a dealer, then follow up by buying your software and hardware there. (End of sermon.)

So this month I'm going to mention a couple of magazines that you might not have seen. Two are from Great Britain and one is from the US.

ST World—UK

The first of the English magazines is *ST World*. A quick check of the February 1989 issue shows articles on desktop publishing, public domain software, books on the ST, the new operating system (TOS 1.4), MIDI, database systems, Microsoft *Write*, and programming. There is also a wide range of product reviews.

Some dealers don't carry magazines because people come in and look at products and get advice—then order what they're interested in from the ads in the magazine. If you use the services of a dealer, then follow up by buying your software and hardware there.

The articles in *ST World* are very well written. I felt that the editing and layout were better than that of any of the US Atari magazines.

To subscribe to ST World, you can write to

Dept, STW Subs,
Gollner Publishing Ltd,
10 Theatre Lane
West Sussex, P019 1SR, England

The phone number is (0243)533575, and a year's subscription is £39. (I have no idea how much £39 is in US dollars, but it is helpful when reading the magazine to remember that they are using pounds, not dollars.)

Atari ST User—UK

The other English magazine is *Atari ST User*. It's a little flashier than *ST World*. If you prefer *USA Today* over the *Wall Street Journal*, this is the one for you. It still covers a wide range of subjects, but in a more dramatic way.

For example, the January 1989 issue covered ST use in art, business, education, and programming. There was also a section on how beginners can start to use the ST, as well as a number of reviews on a wide range of new products.

Frankly, I'm a real stick-in-the-mud, and *Atari ST User* is a bit too bright for me. But if I were giving a magazine to someone with more energy, this would be the one. It is well written and well organized. I'm sure Joe Bob would give it four stars and tell you to check it out.

The subscription page was so bright I thought it was an ad and missed it the first time through. The 12-month subscription is £42.99, which can be sent to Database Publications, FREEPOST, Macclesfield, Cheshire SK10 4YB. The phone number for credit card orders is (0625 879920); it's available 24 hours a day. I'm sure if you give them a credit card number they can work out what that comes to in dollars.

ST WORLD—US

The US magazine I like to follow is *ST WORLD*. The writing is good and is always informative. For example, the March 1989 issue had articles on CADD (computer aided design and drafting), *Prospero Pascal*, MIDI Recording Studio v 1.1, and tips on using *Fleet Street Publisher*.

The main reason I read *ST WORLD* is for David Small's column. Small is the person behind the Magic Sac, Translator One, and Spectre 128. In this article he talks about details involved in designing the Spectre GCR.

The Spectre GCR is to be the first "plug and play" Macintosh emulator for the ST. It will allow the user to plug in the emulator and start using Mac disks in the Atari. Small hopes to get the product out in April of this year.

The column is interesting from a programmer's standpoint because Small deals with the problems of using Mac disks in the Atari disk drive and how he handles those problems. Small had released a product earlier that did this—the Translator One—but it was slow. So the Spectre GCR adds a real speed improvement to handling Mac disks and Small explains how he does this.

To subscribe, write to *ST WORLD*, 1385 Cleveland Loop Drive, Roseburg, OR, 97470-9622 or call (503)673-2259. A one year subscription is $18. ■

Copyright © 1988 by David Hawkins. All rights reserved. *David Hawkins is the host of the Atari conference on The WELL (415/332-6106); send email to dhawk. He has one of the first Atari ST 1040s sold in San Francisco, both monitors, an Okimate 20 color printer, and disks all over the room.*

BY MIKE MARKOWITZ

AppleWorks GS Strikes Out

The usual situation in personal computing is that software lags a year or two behind hardware. The Apple IIGS is a peculiar exception, and to understand why the release of *AppleWorks GS* has been such a bitter disappointment, we need to consider some of the factors that make the GS such a retarded system. I use the term "retarded" in a very specific and concrete sense—the GS is a developmentally disabled computer. Compared to its competitors it suffers from some serious physical handicaps, which can be overcome only by massive infusions of love and money from Apple and the developer community.

Since *AppleWorks GS* (*AWGS*) was released in November, the bulletin boards of Appledom have reverberated with howls of anguish from users. *AWGS* is a very important product. It is a sort of flagship, carrying the hopes and fears of a new operating system GS-OS. Along with the usual bugs expected with any first release of a large and complex new program, *AWGS* inevitably takes a few hits for bugs and problems in GS-OS. The *AppleWorks* name was enough to ensure some big initial sales, but the program's shortcomings raise some serious doubts about its future.

AWGS simply demands more than the IIGS hardware is able to deliver, at least for systems most users are able to afford right now. The original 8-bit *AppleWorks* was a phenomenal success because IIe and IIc owners could use it right away to do useful work without having to make major investments in hardware. This is simply not true for *AWGS*.

AWGS is slow. Claris wrote a special new driver for the ImageWriter II (the printer most GS owners bought) that is excruciatingly slow to print even the simplest document. The *AWGS* database is full of problems, especially for users porting their data over from 8-bit *AppleWorks*. The *AWGS* communications module is klutzy and uses a poorly legible typeface. You cannot automate BBS log-on procedures, direct output to the printer, or do a great many other things that telecommunications people take for granted on their 8-bit software. *AWGS* demands all the memory you have on a 1.25 Mb system (the minimum configuration is the 256K on the GS motherboard, plus a fully-populated 1 Mb memory card). To be safe, you even have to disable the little 32K RAM cache that GS-OS creates.

Mike Markowitz is a computer engineer for a large Southern California aerospace firm. He has been writing about Apple II computing since 1984. You can reach him on AppleLink (MOUSKOWITZ), or GEnie (M.MARKOWITZ), or The Source (SIG 060). *Copyright 1989 © Mike Markowitz. All rights reserved.*

AppleWorks GS simply demands more than the IIGS hardware is able to deliver, at least for systems most users are able to afford right now. The original 8-bit AppleWorks was a phenomenal success because IIe and IIc owners could use it right away to do useful work, without having to make major investments in hardware. This is simply not true for AWGS.

The slowness problem afflicts almost all 16-bit software for the IIGS. This is because the IIGS is trying to do nearly as much work as a Macintosh, with a processor that runs at one-third the clock rate (the ratio is actually close to 2.7977).

Just consider the screen display. In Super-Hi-Res graphics, the IIGS has to manage 64,000 pixels, four bits deep (16 colors). A PC-XT, running at twice the clock rate with muddy CGA graphics has the same number of pixels, only two bits deep (four colors). A Mac SE, running at three times the clock rate, paints about 175,000 pixels, one bit deep (monochrome). A color Mac II has about six times the speed, and five times the pixel-count, with 16 times as many display colors.

AppleWorks GS has a remarkable graphics module that combines bit-mapped ("paint") and object-oriented ("draw") features in a smooth, seamless way that even a top-notch Mac program would be proud to have. But the slow pace at which the screen is redrawn makes using this module about as much fun as watching paint dry.

No one should buy *AppleWorks GS* unless they have a hard disk, or plan to get one Real Soon. This enormous program (three disks) marks the end of the Floppy Age for the IIGS. Most IIGS owners still only have one 3.5" and one or two 5.25" drives. The very high cost of Apple hard disks and the lack of standardization in third-party hard disks have been a major barrier to the success of this system. If Claris wanted to score some points on customer satisfaction, they would arrange to bundle *AppleWorks GS* with a low-cost internal hard disk, like the Applied Ingenuity Inner Drive. Nobody who has to run this program from a floppy-based system is going to be a satisfied customer—there is too much disk swapping, and files take too long to load or save.

The most charitable thing to say about *AppleWorks GS* is that it was released in anticipation of faster hardware. For present GS owners, help is on the way, in the form of an Applied Engineering accelerator card, the TransWarp GS. The long-delayed TransWarp, which will sell for about $400, replaces the 65816 microprocessor of the IIGS with a new one, about three times as fast.

Unless Apple is simply prepared to let this computer family die a lingering death, it will have to do even better than this on future GS systems. The last of the last of the 8-bit machines, the little IIc Plus, showed that Apple's engineers can wring a remarkable speed increase (400%) out of an old design. It should not be impossible for such talented engineers to bring out an inexpensive card that would boost the performance of the GS, perhaps by providing a math coprocessor, a graphics processor, and some high-speed cache memory. The GS was designed with plenty of room for future growth, but unless some product champion emerges out of the Byzantine power struggles in Apple's Cupertino headquarters, it seems doomed to a long, agonizing decline. ■

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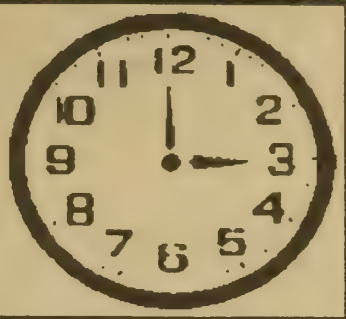

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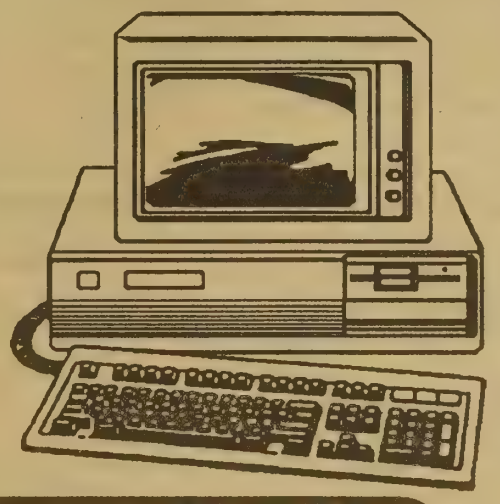

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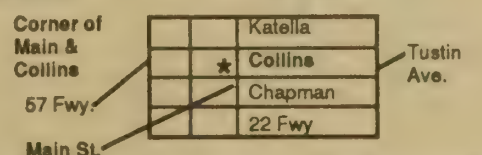

USER GROUP NETWORK

BY MARY EISENHART

Dudes At The Faire, The Disappearing BBS, And More

One of the nice things about the Computer Faire is that it's a great place to meet people who used to be just names on a page. So it was quite delightful, meandering among the exhibits, to run into none other than **Mike Lehman** of the famous **South Bay Amiga Dudes**, who'd made the northern jaunt to the Faire. Mike reports that the group is growing fast and now includes at least one member of the female persuasion. And if you're interested in joining this fine bunch of Amiga enthusiasts, Mike invites you to give him a call at (213)370-6008.

We'd like to extend a hearty vote of thanks to **Michael Paoli** of Oakland, who recently sent us a fax listing BBSes he'd found in our listings which seem to have departed the planet. We heartily encourage you to do likewise, at either our Oakland (415/652-4618) or LA (213/467-5486) fax numbers.

The **Disappearing BBS** is one of our most frequently-recurring problems, and one we need your help with to keep everybody's telecommunication life positive and hassle-free. Once again, the last few months have brought us an increased number of phone calls from irate folks who have unwittingly inherited the number of some defunct BBS, whose operator never quite got around to telling us the board was shutting down. Nobody likes having a modem screech at them, and people who don't know what a modem *is* are naturally driven bonkers by phones that ring at all hours and then emit high-pitched squeals at them.

Sure, it's not fun to close down your board. But show a little consideration for the hapless person who's going to be assigned that phone number, probably sooner than you think, and *tell us* when you're closing down, temporarily or permanently.

By the same token, if you encounter a Board That Isn't There in your telecomm travels, please pick up the voice phone (during business hours) and give us a call at (415)652-3810. Tell us the number that doesn't work, and we'll pull the listing. Feel free to use US or email, or the wonders of fax, to give us similar info. We appreciate your help.

On which subject, if anybody knows what's become of the **West Monster Castle BBS** in Orange County, please let us know. Its former number now belongs not to Federated #3 in Westminster but to some poor person's residence. The WMC's listing has therefore been deleted.

Faithful Correspondent **Lynzie Flynn**, who's been operating **Lynzie's Motherboard** for several years now, has added more phone numbers to handle the increased volume of callers. In addition to a dedicated line for 9600 baud US Robotics callers (213/650-6172), the board now has three 213 and three 818 lines which operate 24 hours a day at 300/1200/2400 baud, 8-N-1. Among the Motherboard's services are multiuser chat, a matching service, email, group and private discussions, and local social events for the board's members. Check Lynzie's listing for a full list of phone numbers.

On a sadder note, we've received a note from **Norman Sauppé** of Pasadena, regretfully informing us that the **Pacific Computer Club** has disbanded and is no longer meeting. So if you've been going to the meeting place at the appointed time and there was nothing going on, that probably explains it. Thanks to Norman for the information, and best wishes to him and the other members of the PCC as they continue their adventures in computing.

Epson users take note: we've received a letter from **William Winger** of the newly-merged **Los Angeles** and **San Fernando Valley Epson QX Users Group**, which wants to announce its new address and phone number. You can now write to the group at 6025 El Escorpion Road, Woodland Hills 91367-1199. Phone number is (818)347-7414, and telex, for those so inclined, is 299374 WINT UR. William tells us that the merger makes SFV/LA one of the largest Epson user groups in the country, so if your QX has been giving you fits or if you've made a marvelous discovery you want to share with the world, check this group out.

At last month's conference of the Legal Assistance Association of California, held in Los Angeles, the Public Interest Clearinghouse announced the formation of **LegalAid/Net**, a valuable resource for law offices which provide free legal services to disadvantaged clients such as the homeless, disabled, and elderly. "Not only will attorneys and advocates have the ability to transfer documents from one part of the state to another in a matter of minutes, they'll also have immediate access to briefs, updated case law, reference materials, computer technical assistance, and other resources critical to the day-to-day operation of their offices," says **David Goldsmith**, coordinator of the project. Adds **Mary Viviano**, the Clearinghouse's executive director, "It is nearly impossible to achieve equal access to justice for the poor when there is such unequal access to technology. The goal of LegalAid/Net is to tip the technological scales in favor of the disadvantaged clients represented by California's legal services agencies."

Several national organizations and other legal services offices are already on the net, which has been aided by donations of hardware and software from Apple Computer and other public and private sources. If this sounds like a good resource for your law office, you can get more information by calling either David Goldsmith or Mary Viviano at (415)565-4695.

That's about all for now. Please keep the news coming—send US Mail to User Group Network, 5951 Canning Street, Oakland, CA 94609, fax to (415)652-4618, and email to microx on the WELL (415/332-6106) or {pacbell, hplabs, ucbvax, apple}!well!microx from Usenet. We also cheerfully accept faxes at (415)652-4618 and (213)467-5486. ■

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203

Terrapin Station. (203) 656-0134. Grateful Dead Board. Sysop: Klaus and Gretchen Bender.

209

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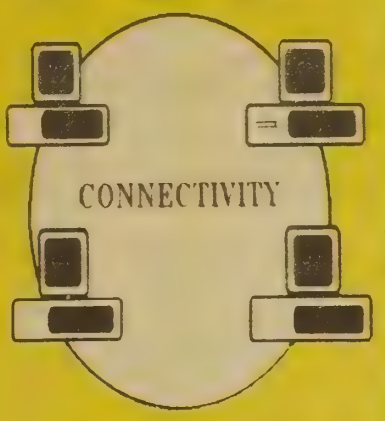

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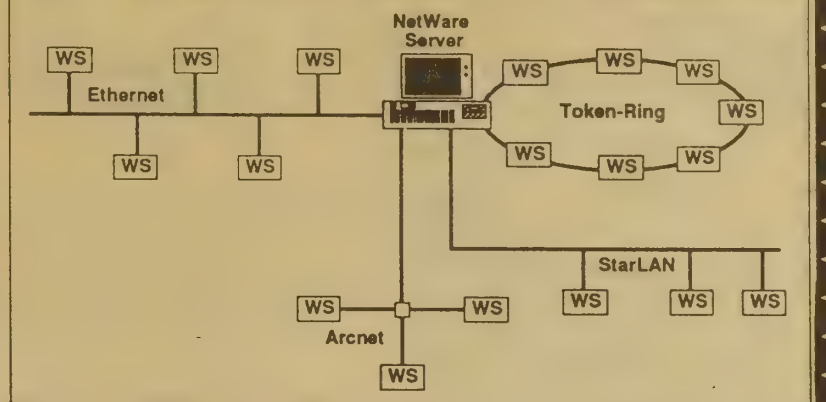

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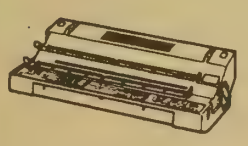

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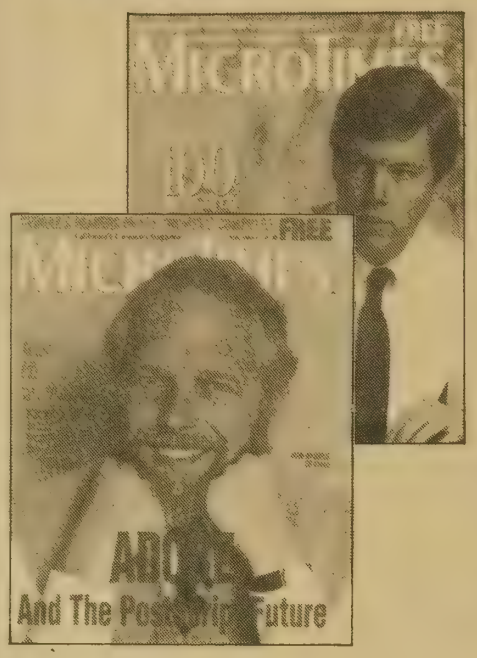

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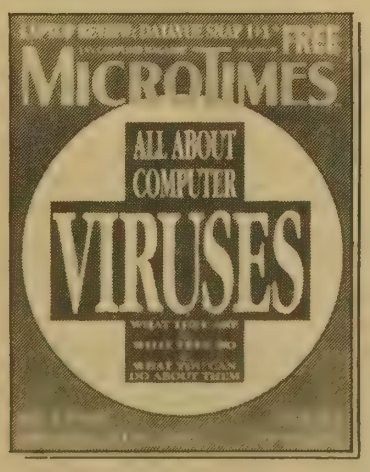

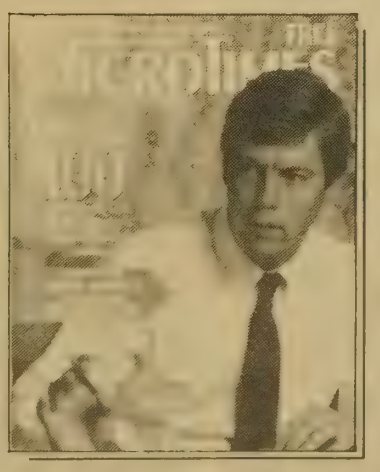

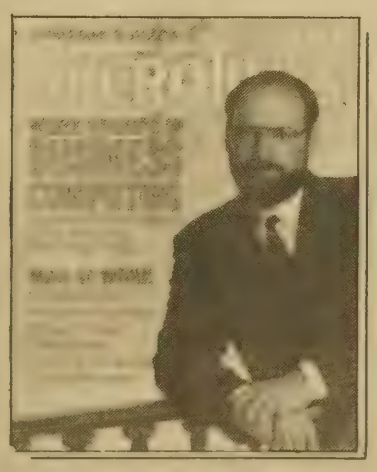

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MacLodge. (818)355-8040. N-8-1, 24 hrs., 300/1200/2400. Mac oriented Red Ryder Host BBS. Discussion, files, and on-line games. Running since December 1985. Sysop: Blake Chattaway.

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Oracle. (818) 509-9681. 300/1200/2400 8-N-1 24 hrs. 9 phone lines. System password MICROTIMES for higher access. Free demo version of Oracomm BBS software. Sysop: Gary Young

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Teleweb Valley. (818)999-1501.Los Angeles 818 access number.

The Bear's Lair. (818) 988-6694, 300/1200/2400, 24 hrs. Macintosh oriented, 200Mb on line, multiple message sections. Sysop: Bruce Gerson.

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Valley On-line Shopping Network. (818) 772-4227. 300/1200 (soon to be 2400). Provides local businesses the opportunity of selling their products on-line to local and national computer consumers. Sysop: BRAINS.

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CompuHelp. (916) 786-3923. 24 hr database-bulletin board system for the Blind and Visually Impaired. Sysop: National Association Of Blind And Visually Impaired Computer Users, Inc.

Dial-Your-Match. (916) 275-1265. Redding. (916) 736-0739. Sacramento.

Hackney's Hideout BBS. (916) 961-1042. 1200/2400 8-N-1. Includes AT&T users conference. Sysop: Rich Hackney.

Night-line Network Central. (916) 427-1107, 300/1200, 8:00 PM to 8:00 AM daily. Forum for individuals, clubs and organizations that want to network nationally with others. Sysop: Eric Thomas.

Phoenix Landing BBS. (916) 966-8243. 300/1200/2400. Macintosh oriented but many other computers are supported. File areas for Mac and other computers. Supports echomail conferences including ECHOMAC and BAYMAC.

ASSOCIATIONS

AACCPAC Accounting SIG Of UCLA Users Group. Meeting: 2nd Wednesdays @ 7 PM. Users, CPAs, consultants and other business people interested in sharing information on Computer Associates ACCPAC Accounting Software. Call Donna Miller, (213) 393-0244.

California Educational Computing Consortium CCCE. For information write Herb Garrett, Long Beach City College, 4901 E. Carson Street, Long Beach, CA 90808.

Computer Professionals for Social Responsibility. Meetings: Most third Wed. 7:30 PM UCLA. CPSR/LS focuses on computer system risk and reliability and on privacy and civil liberties issues.

International Blind Users Group (I-BUG). Part of the National Association of Blind and Visually Impaired Computer Users. Membership consists of access to CompuHelp, a 24 hour online database/bulletin board system, and receiving CompuHelp On-Disk, a modem database-bulletin board system on two double-sided disks. (916) 783-0364 or 645-8036.

L.A. Real-Time Problem Solvers. Meetings: 4th Saturdays, 10 AM to 1 PM. Hawthorne Public Library, 12700 S. Greviellea Ave., Hawthorne. We speak A/D, SBC, RISC, FORTH and C. We support real-time, real-world hardware and software problem solving, such as firmware, device drivers, instrumentation and very smart toasters. (213) 371-0589.

North Orange County Computer Club (NOCCC) Meetings: Monthly on Sunday, @ Chapman College near downtown Orange. Help for beginners, SIGs, educational activities, monthly newsletter. Open to any computer user. (714) 998-8080.

Realtor Microcomputer UG (RUG). Meetings: 4th Thurs. 7 PM Pasadena BOR, cnr. Orange Grove & Los Robles, Pasadena, CA.

USER GROUPS

AMIGA

Amiga Friends. Meetings: 3rd Sun. Rancho Santiago College, Rm R-124, 17th & Bristol, Santa Ana. Call for current meeting info: (714) 775-7237 (24 hrs.) or write: P.O. Box 4186, Huntington Beach, CA 92605.

Amiga Special Interest Group. Meetings: 1st Sunday except holidays. Chapman College, 333 N. Glassell, Orange, CA. Amiga SIG is part of the North Orange County Computer Club, a thousand member organization together 12 years.

Amiga User's Group Of Long Beach. Meetings: 3rd Sundays, 1 pm, Mid-Cities National bank, Lakewood and Artesia, Bellflower. Tech, Beginners, Video/Graphics sigs. (213) 422-8226/432-2088.

Bits & Pieces Amiga Group of Anaheim. Meetings: each Tues. 6:30-10 PM 1130-A North Kraemer Blvd., Anaheim, CA. DOS Classes, tech. help & more. BBS: (714) 630-8897.

LAAUG-Los Angeles Amiga Users Group. Meeting: 3rd Wednesdays @ 7:30 PM. Veteran's Auditorium at Overland Ave. & Culver Blvd. Many SIGs, Rookie, music, video, monthly PD disks.

Pacific Computer Club. Meetings: 2nd Thurs. 7 PM 391 S. Madison, Pasadena, CA.

San Fernando Valley Amiga Users Group (SFVAUG). Meetings: 2nd Thursdays, 7 pm, American Legion Hall, 7338 Canby Ave., Reseda. Call: Randy, (818) 719-9211.

South Bay Amiga Dudes. Meetings: 3rd Thursdays, 7 pm, Redondo Beach Blvd., Lawndale. Call: Charlie Breene at (213) 540-2834.

South Orange Commodore Klub (SOCK). Meetings: 3rd Saturday 9:00 A.M. Union Savings, 23688 El Toro Road, El Toro, CA. For Commodore 64/128 users and Amiga users. One-hour general meeting is followed by separate group meetings for each.

AMSTRAD

Amstrad Users Club Of Orange County. Meetings: 3rd Saturdays, 10 am til 2 pm. Board Room upstairs in the Santa Ana Library, Civic Center & Ross streets. For more information call: (714) 953-6471.

Amstrad Users Group, USA. Meetings: Free mail and phone support for PCW. 12741 Matteson Ave. #3 LA 90066. (213) 397-7981.

APPLE

Apple/Valley Computer Club. Meetings: 2nd Wednesdays, 7:30 pm, Valley Presbyterian Hospital, meeting room #3. Discussion on Apple, Mac, Amiga, IBM. BBS: (818) 782-6471. Up loading/down loading. Visitors welcome. Eamon games, misc. Voice: (818) 988-1752.

Original Apple Corps. Meetings: 2nd Sun. 12:00 Noon 3rd Floor Community Room, Santa Monica Mall. First Apple group ever. SIGs for AppleWorks, Telecomm, Educators, Macintosh. Call Fred Duffy at (213) 396-5515.

Tri-City Apple Users Group. Meetings: 3rd Thurs., 7:00 PM, 50 N. Hill Ave., Pasedena. Call (818) 846-6682. Friendly Apple II experts.

ATARI

Atari Computer Association Of Orange County. Meetings: 2nd Sun. Rancho Santiago College, Room W101, Santa Ana. BBS: (714) 540-7378.

North Orange County Computer Club Atari ST SIG. Meetings: First Sundays, Chapman College in Orange. (714) 552-5185, or Bill, 633-4665, or Mac, 751-3090. Call: Dain,

Santa Clara Valley Atari Computer Enthusiasts (SCVACE). Meetings: 1st Thurs. 7PM Mint Canyon Moose Lodge, 18000 W. Sierra Hwy, Canyon Country. 8-bit group. Atari ST special group now forming.

South Bay Atari Computer Enthusiasts (SBACE). Meetings: 2nd Tuesdays, 7:30 pm, Lomita VFW Hall, 1865 W. Lomita Blvd., Call: Alan, (213) 542-7870.

South Bay Atari ST Computer Club. Meetings: last Mon. 8 PM 15331 Praire Ave. Lawndale.

COMMODORE

Bits & Pieces Commodore Computer Group of Anaheim. Meetings: each Tues 6:30 PM 1130-A N. Kraemer Blvd. (Kraemer & La Palma), Anaheim. Offers public domain software, demonstrations, interactive training on your computer. $33 annual dues.

Commodore 64 Software Users Group. For new Commodore owners. One on one help. Call (714) 531-2977 for info.

Mother Lode Commodore Users Group. Meetings: 2nd & 3rd Thursdays. Calaveras County Water District Board Room. Supports the Commo-

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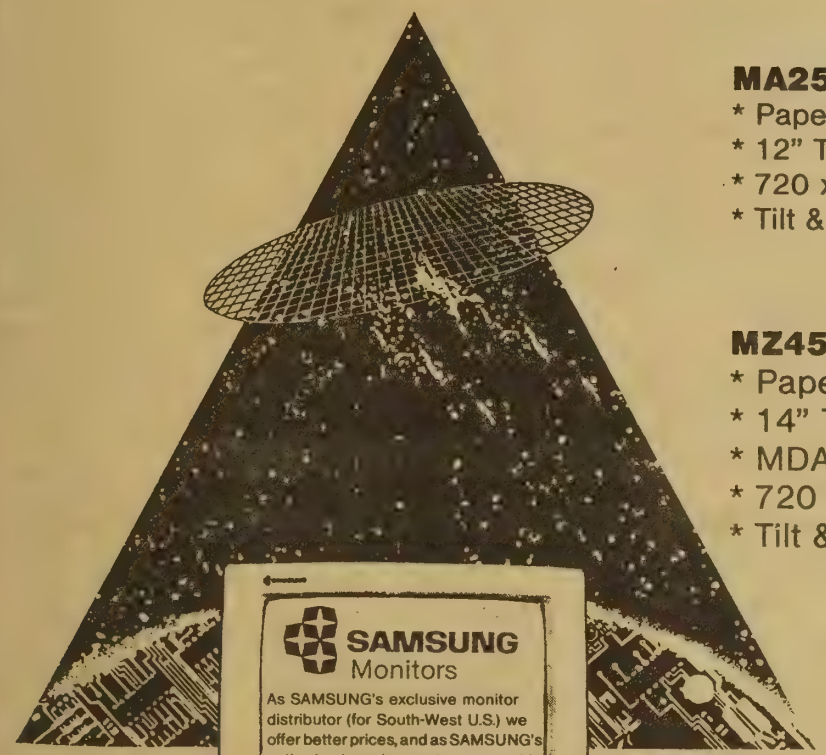
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OKOK Computer Users Group. Meetings: 2nd Wed. 7-9 PM Altadena Public Library, 600 E. Mariposa. Call (818) 794-3243. Serves, Osborne, Kaypro, Commodore C128, PCs and compatibles and both MS-DOS and CP/M operating systems.

Orange County Commodore Technical Users Group (C-TUG). Meetings: 4th Sun. 11:00 AM ,4th & Tustin, P.O. 1497, Costa Mesa, CA . 92628. Newsletter; 2 BBS's; door prizes; demos, raffles, speakers, (714)750-3003

Pacific Computer Club. Meetings: 2nd Thurs. 7 PM 391 S. Madison, Pasadena, CA.

Pasadena Commodore Computer Club. Meetings: 1st and 3rd Weds. 7:00 PM Circadian Room, Pasadena City College Cafeteria. Colorado Blvd & Hill, Pasadena. Call (818) 447-2212 after 2:30 PST or write P.O. Box 163, Arcadia, CA 91006.Supports C64 and 128 machines.

South Bay Commodore Users' Group. Meetings: 4th Tuesdays, 7:00 pm, Home Federal Savings Conference Room, 1670 Pacific Coast Highway, Redondo Beach.

South California Commodore Users Group. Meetings: 3rd Tuesday each month, 7:00 P.M., MidCities National Bank, Lakewood and Artesia Blvds., Bellflower, CA.

South Orange Commodore Klub (SOCK). Meetings: 1st Wed. 7 PM Laventhol & Horwath, Exec. Conf. Rm.7th Fl., 3699 Wilshire Blvd., LA, CA.

dBASE

UCLA PCUG dBASE SIG. Meetings: 3rd Wednesdays, 7:30 pm. Call: (213) 874-7471.

Valley West dBASE Users Group. Meetings: 3rd Mon. 7:00 PM Blue Cross Of California, 21555 Oxnard St., Woodland Hills. Call (818) 343-9033 or write P.O. Box 16971, Encino, CA 91416.

DEC

DECUS Rainbow Pacific PC-LUG. Meetings: 2nd Wed. 7:00 PM Digital Equipment Corporation, 6101 W. Centinela, Ave., Culver City. Digital Equipment Computer Users Society. Free to DEC users. Call Karen Danforth (818) 787-8736 or write P.O. Box 2278, Van Nuys, CA 91404.

DESKTOP PUBLISHING

VICUG–DTP. (Valley IBM/Compatibles Users Group). Meetings: 2nd Fridays, 7:30–10:00 pm. Valley Plaza Recreation Center, 12240 Archwood St., North Hollywood, CA. Call: Harry Tischler, (818) 997-6000.

EPSON

San Fernando Valley and Los Angeles Epson QX User Group. Meetings: 3rd Tues. 7 PM 6025 El Escorpion Rd., Woodland Hills. Call: (818)349-7417.

IBM AND COMPATIBLES

Calsonic PC Club. Meetings: 1st Tues. 5:15 PM 9 Holland, Irvine, CA.

Greater South Bay PC User's Group. Third Thursdays, @ 7 PM, Building behind Christ the King Lutheran Church, 2706 W. 182nd St. Torrance. Newsleter, BBS, more! Guests welcome. Call for more information. Evening: (213) 532-2123.

IBM & Compatibles Users Group-Ontario Area. For information call: (714) 982-1270.

Kenny's Computer Club. Meetings: Each Saturday 8:00 A.M. t133 Locust St. Apt. 19, Long Beach, CA. For those with an interest in graphics, DTP, Lotus, Autocad, games, databases and word processing.

Kern Independent User Group. Meetings: Write Kern Independent PC User Group, P.O. Box 2780, Bakersfield, CA 93303.

Long Beach IBM Users Group. Meetings: 3rd Tuesdays. 7 PM, Woodruff Medical Plaza, 3816 Woodruff Ave., Room A, Long Beach. Contact: Jim Wells. Call: (213) 439-7114.

OKOK Computer Users Group. Meetings: 2nd Wed. 7-9 PM Altadena Public Library, 600 E. Mariposa. Call (818) 794-3243. Serves, Osborne, Kaypro, Commodore C128, PCs and compatibles and both MS-DOS and C/PM operating systems.

Orange Coast IBM PC User Group. Meetings: last Sat. 9 AM Science Hall, Orange Coast College, Costa Mesa, CA.

Orange County IBM PC Users Group. Meetings: 2nd Thursdays 7:30 PM. Bradford Retirement Community Center, 1180 N. Bradford, Placentia. Meetings feature guest speakers on hardware and software topics related to the interest of our members. Other activities include sharing tips and problems, access to club library and a club newsletter. Call: Mike Lyons, 2114 W. LaPalma, Anaheim, CA 92801. (714) 774-3236.

Pacific Computer Club. Meetings: 2nd Thurs. 7PM 391 S. Madison, Pasadena, CA.

Pasadena IBM Users' Group. Meetings: 3rd. Wed. CalTech, Bridge Bldg., Rm. 201.

PC*UG Computer Club. For Hughes Aircraft Employees. Call (213) 334-3422.

QUICK & EASY Mailmaster User Forum. Meetings: monthly LA/Airport area. Users interested in maximizing performance of Quick & Easy.

Saddleback College IBM-PC Users Group. Meetings: 3rd Sat. Room 210, Business and General Science Building, Saddleback College, Mission Viejo. Call Susan Gordon at (714) 582-4650.

South Bay Users Group (SBUG). Meetings: 1st Sun. Mercury Savings, Long Beach, CA.

South County PC Users Group. Meetings: 3rd Sat. 9 AM Great American Savings, 23688 El Toro Rd., El Toro, CA.

Technical Users Group (TUG-NET). Meetings: Call for info (818) 882-6045. BBS (818) 882-6045.

The IBM & Compatibles User Group (ICUG). Meetings: 4th Thurs. 6:30 PM or 7:30 CAL Lutheran Univ., 60 W. Olsen Rd., Thousand Oaks. Group is 5 yrs. old & has 150 members Meetings begin at 6:30 for beginners, 7:30 regular members.

The Southern California K-Man Users Group. Meetings: 1st Wednesday, 7:00 P.M., Laventhol and Horwath, Executive Conference Room, 7th Floor, 3699 Wilshire Blvd., LA. Demo of the month features new software and hardware.

TRS Nybblers. Meetings: 1st Wed. 7 PM 2006 W. Magnolia, Burbank. Supports MS-DOS, CP/M, IBM or IBM clones.

Valley Computer Club—IBM. Meetings: 1st Wednesdays, 7 pm, Burbank Bd. of Realtors Bldg., 2006 W. Mangolia, Burbank. Call: Aaron Epstein, (818) 769-1837.

VICUG (Valley IBM/Compatible Users Group). Meetings: 4th Fridays, 7:30 pm, Mercury Savings Bank, 14801 Ventura Blvd., Sherman Oaks.. Call: Harry Tischler, (818) 997-6000.

VICUG–DTP (Valley IBM/Compatibles Users Group). Meetings: 7:30–10:00 pm, Valley Plaza Recreation Center, 12240 Archwood St., North Hollywood, CA. Call: Harry Tischler, (818) 997-6000.

KAYPRO

OKOK Computer Users Group. Meetings: 2nd Wed. 7-9 PM Altadena Public Library, 600 E. Mariposa. Call (818) 794-3243. Serves, Osborne, Kaypro, Commodore C128, PCs and compatibles and both MS-DOS and C/PM operating systems.

LEADING EDGE

Leading Edge Computer User Group of Ventura County. Meetings: 2nd. Sat. 10 AM Camarillo Library, 3100 Ponderosa Dr., Camarillo, CA. Lectures on hard/floppy disk usage; program demos; beginner classes. Single: $20, couple $25.

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APX, Inc. An national intercorporate computer users information service with several communications channels including an electronic forum on MacNet, newsletters, and local and national meetings and special panels. Several local chapters exist, you can start one too. Call: (408)745-0665. Write to: Mike Bailey, APX, 370 Altair, PO 175, Sunnyvale, CA 94086.

California State University Macintosh Users Group. Meetings: California State University, Long Beach.

Conjo Ventura Macintosh Users Group, Inc. Meetings: 1st Thursdays, Thousand Oaks Public Library, 1401 E. Janss Road, Thousand Oaks. Call: Ed or Ellie Darling at (805) 584-8733.

LAMG (Los Angeles Macintosh Group). Meetings: Call (213) 278-LAMG or write 12021 Wilshire Blvd. #349, Los Angeles, CA 90025.

MacValley. Meetings: 3rd Tues. 7:30 PM Burbank High School Cafeteria at Burbank Blvd. and Third St. Call David Lagerson, (818) 998-5546or write P.O. Box 4279, Burbank, CA 91503.

Moreno Valley Macintosh Users Group (MVMUG). Product demos, newsletter, SIGS, BBS, more! For information about the club and meeting call: (714) 684-1337.

Original Apple Corps. Meetings: 2nd Sun. 12:00 Noon 3rd Floor Community Room, Santa Monica Mall. First Apple group ever. SIGs for AppleWorks, Telecomm, Educators, Macintosh. Call Fred Duffy at (213) 396-5515.

San Gabriel Valley Macintosh Users Group. Meetings: 1st Thursdays, 7:30 pm, Pasadena City Library, 285 E. Walnut. (213) 684-4266.

SBAMUG (South Bay Apple Mac User Group) Meetings: Last Wednesday of each month, 7:30 PM, Ticor Title, 4240 Artesia Blvd., Torrance. Call (213) 316-7738.

South Coast Macintosh Users Group. Meetings: First Tuesdays, @ 7 PM, Goleta Library. Publishes a newsletter with reviews, offers advice, support for Mac users, discounts at local dealers. Call: Vince Leamons, 685-7295.

West Orange County Macintosh Users Group (WOCMUG). Meetings: Last Tuesday. F & M Bank in Rossmore Center, Orange County, CA.

Whittier Area Mac Users Group. Meetings: 2nd Saturdays, 10 am, Granada Heights Friends Church, 11818 S. La Mirada Blvd., Rm. C-21. (213) 691-1622.

NETWARE

Orange County Network Users Group (OCNET). Meetings: 2nd Tues. Wyle Labs, Irvine CA. Open to users, consultants, all interested in NETWARE. Call Mark at (714) 955-0616

Netware User Group Los Angeles (LOSNET). Meetings: 2nd. Wednesdays. Welcomes consultants, CPA's, dealers and users interested in sharing information on NETWARE and related products. Call Fane, (213) 452-1335. 2716 Ocean Park Blvd, Santa Monica 90405.

OPEN SYSTEMS

Open Systems Accounting, So. Cal Users Group (OSASCUG). Meetings: 4th Wed. Wyle Labs, Irvine, CA. Users of Open Systems, Altos Accountant, CADO, & Rexon accounting software. Open to end users, dealers and consultants. Call Mark at (714) 955-1724.

OSAS Systems Users Group Los Angeles (OSASUGLA). Meetings: 1st Wednesdays. Welcomes consultants, CPA's, dealers, users and QI's interested in sharing information on OSAS and related products. Call Fane, (213) 452-1335. 2716 Ocean Park Blvd., Santa Monica 90405.

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TANDY/RADIO SHACK

Los Angeles - Wilshire Color Computer Users' Group. Meetings: 2nd Sat. 12:30-5:30 PM Felipe de Neve Library's Comm. rm., 2820 W. 6th St., LA, CA.

South Bay Users Group (SBUG). Meetings: 3rd. Fri. Mercury Savings, 22939 Hawthorne Blvd., Torrance, CA.

TEXAS INSTRUMENTS

LA 99er Computer Group, 4th Wednesdays, August 24, Sept. 28, Oct. 26. @ 7:15 PM, Torrance Public Library, Torrance Blvd. @ Madronna. Call: Teresa Masters, (213) 271-6930.

San Fernando Valley TI-99/4A User Group. Meetings: 2nd Wed. 7:30 PM Doctor's Conf. Rm., Sherman Oaks Hospital, 4929 Van Nuys Blvd. Call for info: (805) 379-2937. Or write: SFV 99ers, 633 Hollyburne Ln., Thousand Oaks, CA 91360.

TI Professional. Call (213) 397-9668.

TI Users Group of Orange County. Meetings: 3rd Thurs. Peek Funeral Home, 7801 Bolsa Ave., Westminister. Call 633-7317.

TIMEX/SINCLAIR

Timex-Sinclair Users Group. Meetings: 3rd Mon. 7 PM 11828 Jefferson Blvd., Culver City, CA.

Timex-Sinclair. Meetings: Call John W. Petersen (213) 545-9581 or George Kuby at (213) 551-9454. BBS: Grey Matter (213) 971-6260.

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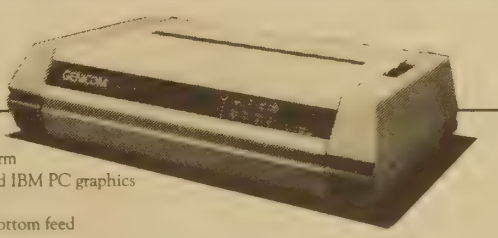

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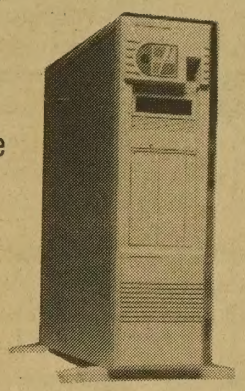

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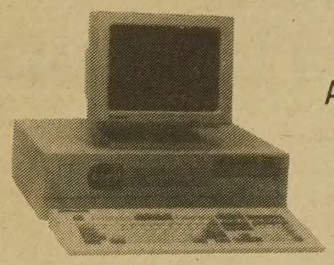

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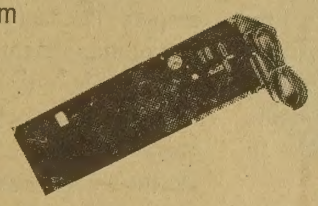

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"...some were born nerdy, some achieved nerdiness, and some had nerdiness thrust upon them." — Barney Cohen (to paraphrase Shakespeare)

There is a group amongst us in this modern world who hold that edge above the rest. The technological edge.

They're the ones who are recognized as different, a little out of step. They have been called a lot of things: eggheads, retards, spazzes, dorks, and, recently, nerds. They are Homo Sapiens Nerdis.

The people upon whom we bestow the honor of the slang term "nerd" may have been with us since the days of the cave and stone ax. But the number of people with nerd traits seem to be on the upswing. There is even a candy named in their honor—**Nerds**, by the Willy Wonka Brands.

The concept of nerd cannot simply be considered to be a cultural curiosity. It must be viewed, as rather, a genetic trait destined to dominate the Western technological world. Nerds are a sub-species of the **Homo Sapiens Sapiens**; they are **Homo Sapiens Nerdis.** A potentially superior man of the future.

While this, on the surface, may seem ludicrous, let's examine the idea. For all that we know, "genius" is carried latent within us, like color blindness. It may be passed on with just the right combination of genes. Its occurrence cannot be predicted. The recessive genius or nerd genes may be deep within a part of all of us. It is the next major adaption simply waiting for the proper conditions. Perhaps those conditions are upon us!

After all, in 1918 a series of wars began. The country sent the finest, fittest, and most able non-nerd types to be slaughtered. The nearsighted, the exceedingly studious, the ones that marched to a different tune, the excessively different nerd-types, the "4-Fs", remained. This did not just occur for the so-called "War to End All Wars" (later retitled WWI) but for the two sequels as well—WWII and the Korean War. The result was a forever changed "gene pool," with the usual breeders gone. What remained were the nerds and those with strong nerd-like traits. All left to take up the mating slack.

The genetic alterations of such a catastrophic series of wars must have had a much greater impact than we have ever considered. For example, a quick look around us will show a greater number of near-sighted people than at any time before in history.

Certainly, the wars must have created a nerd boom. The tendency was, prior to the wars, that nerds were beginning to have a greater advantage over normal man. With the greater reliance upon nerds as breeders, the overall number of nerd and nerd-gene carrying offspring has increased.

What other possible explanation is there for the change in modern man? The frequency and duration of the last glut of war changed the evolutionary pace of man. The pace of inventions, as well, has also changed. One can only suppose that if the wars had not occurred (or if the nerds were the ones sent), the inventions that have become a part of our daily lives may never have been invented. It is the classic—invention breeds invention, and when prolific inventive minds exchange ideas, the invention cycle speeds up. With the sudden advent of more nerds, hence more inventors, the invention rate accelerated. This is the reason for the increase in scientific endeavor and discovery.

A look back over history shows that nerds were here and there, possibly from the start. The earliest examples of the classic nerd might be the pre-Christian scribes, who toiled for hours copying and embellishing manuscripts. The wizards, shaman, and religious prophets were stereotyped in much the same way as today's *wunderkind*—the computer masters. Even Christ may have been a pre-computer hacker-type.

Nerd children were always different from other children. They had extraordinary powers of concentration, and usually had a difficult time in socialization. Even the Bible made note of these unique people—the meek.

The meek were the ones chosen by the learned, introverted cognoscenti to carry the knowledge of the ages. Nerds chosen by master nerds. Mentor and apprentice. The mentor's protegés were chosen from all walks of life. Their backgrounds were not of the same importance as the genetic, or possible combination of socio-cultural and genetic, factors that combined to create the nerd—intellectual prowess, the physical traits, and the social idiosyncrasies. This was no different than the blacksmiths who chose boys with a certain physique and height, or even the choices in the recruitment of todays pro football teams. In other words, nerds picked nerds.

Perhaps in pre-historical times, the long-muscled, thin, and tall Cro-Magnon were thought of as curious oddities by the Neanderthal. After all, they were not the squat, heavy-browed, muscle-bound "he-men" that the ol' Neander were. The Cro-Magnon, and their spouses, may have been scorned by the rest, until their superiority could not be doubted. They over came, over took, and ruled supreme. Perhaps the same thing is occurring right now to man as a species—under our very noses. The nerd-scorners would probably discount all of this. But, then again, so did the Neanderthal, at first.

The nerd knows scorn too. What is the stereotypical nerd to you? A bespectacled jerk of a guy who cannot look you in the eye as he speaks to you, gives a dead-fish handshake, wears dorky clothing, and wouldn't be caught dead without a pocket-protector or a hex-dec calculator (which supplanted the old slide rule some years back). The perfect nerd will never acknowledge that either sex or the other sex exist, preferring to rely on the stork-delivery procreation myths. They have no inkling of physical activity, fitness, or—God forbid—body building.

These stereotypes are simply aggressive put-downs designed to keep nerds in their place. Historically, nerds have had to fight an uphill battle for respect. The fact that they were different bothered, and perhaps frightened, the standard man. The nerd was unable, without a struggle, to achieve prominence in the world. He has not been an abundant species. At least, not until certain factors made the genius's skills an advantage. The technological age has brought with it an increased incidence of genius/nerd.

Could it be that we carry within us a collective genetic memory—an instinct that senses their importance or potential power? A memory that stays just beyond our consciousness. A memory that recalls the fear of being supplanted—over and over—by new species. After all, throughout our evolution, the species with the greatest advantage survived. Perhaps we call them nerds because we both fear and revere them.

The big positive turning point for nerds, though, was brought forth by the computer revolution and the personal fortunes made by the likes of Steve Jobs and Steve Wozniak, the founders of Apple Computer Corporation, who became worth a quarter of a billion dollars each, almost overnight, by inventing a popular home computer. While the inventor-nerd had always done well for himself, and many millionaires came from this rank, few made so much so quickly. This clearly showed the potential wealth that introverted innovators could quickly rack up—thus changing the public perception.

Ridicule was transmogrified into awe. The nerd became the superhero overnight. It marked a change in societal direction and taste. One can sense something bigger is coming, that we've only begun to see what these new "supermen" can do when given free rein.

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The only explanation—for the sudden technological explosion is mysterious proliferation of the nerd. ■

John C. Dvorak graduated from the University of California. He is a contributing editor of PC Magazine and MacUser, and considered by many to epitomize the contrarian view of things—a charge that he vehemently denies. Dvorak's motto is: If you have nothing nice to say, then don't say anything at all.

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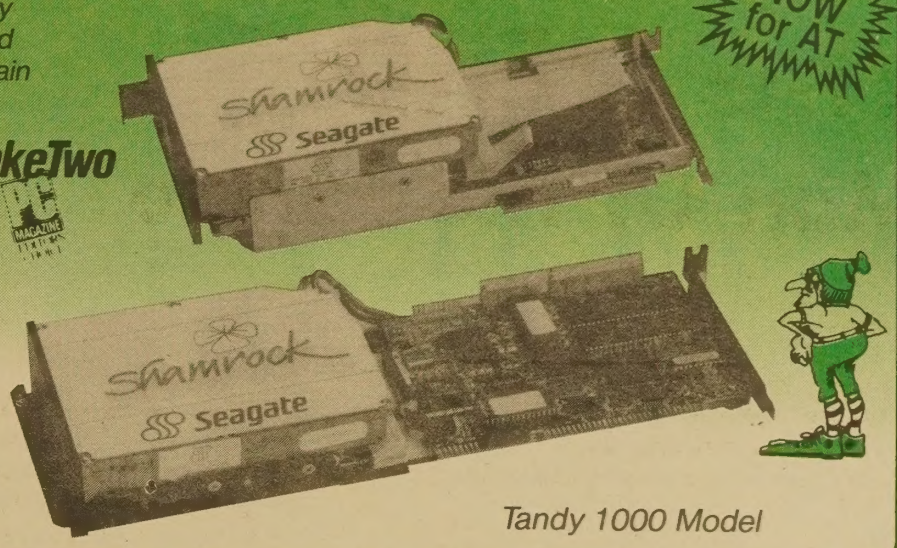

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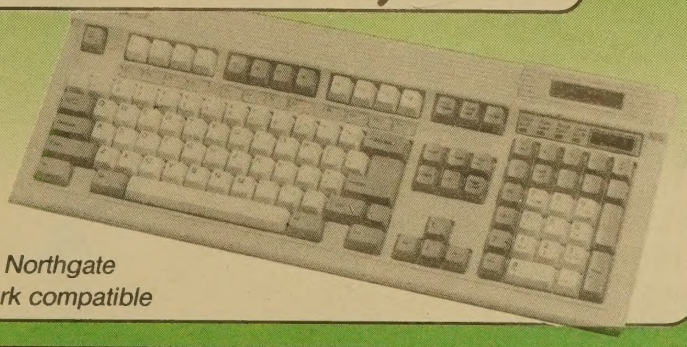

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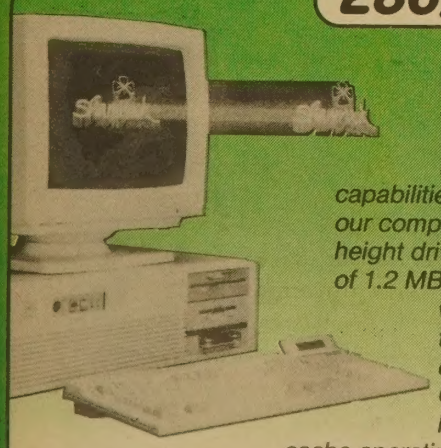
286/386 Computers



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*PC Magazine, January 12, 1988

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